

SERVICE MANUAL

notebook

M620NC / M621NC



Notebook Computer

M62NC Series

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the *M62NC* series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Preface

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit (DC Output 18.5V, 3.5A minimum AC/DC Adapter).

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

**TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER,
TELECOMMUNICATION LINE CORD**

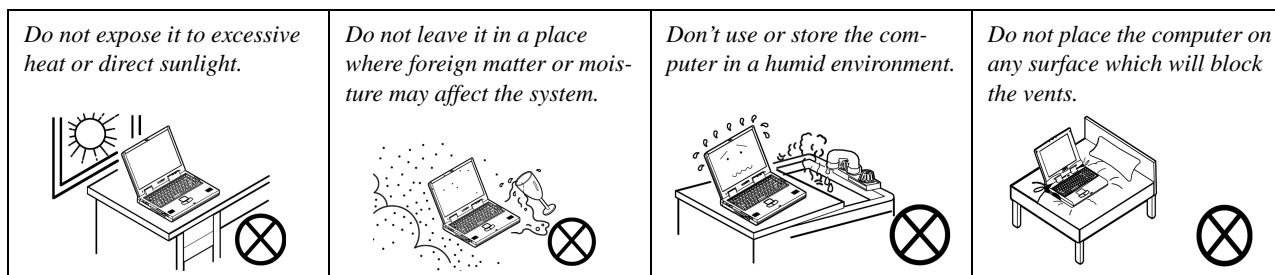
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

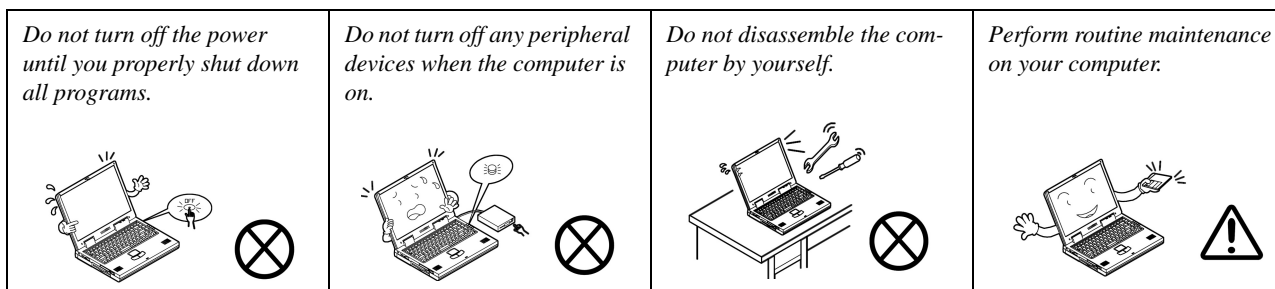
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

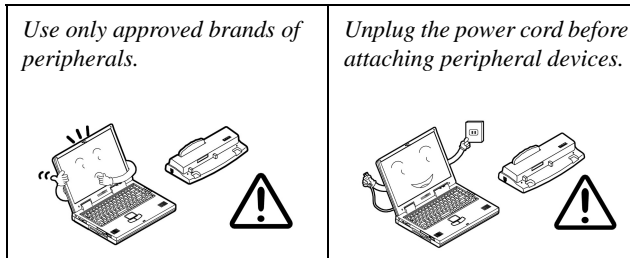


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

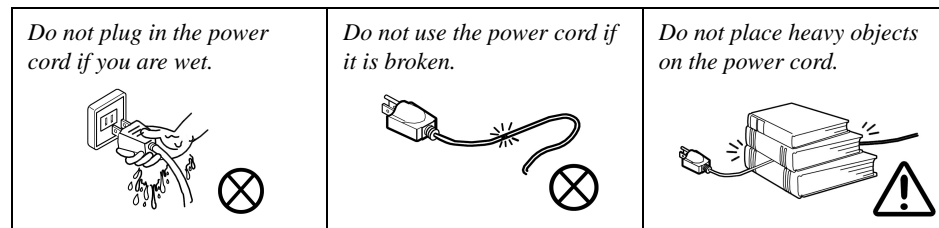
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.



Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Preface

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

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1: Introduction

Overview

This manual covers the information you need to service or upgrade the **M62NC** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows XP*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **M62NC** series notebook is designed to be upgradeable. See ***“Disassembly” on page 2 - 1*** for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the “⚠” symbol.

The balance of this chapter reviews the computer's technical specifications and features.

System Specifications

Feature	Specification	
Processor (CPU On Board)	Intel® Core™ Solo Processor FC-PGA6 Package U1400	65nm (65 Nanometer) Process Technology 2MB On-die L2 Cache & 533MHz FSB 1.20 GHz
	Intel® Celeron® M Processor FC-PGA6 Package ULV 423	65nm (65 Nanometer) Process Technology 1MB On-die L2 Cache & 533MHz FSB 1.06 GHz
Core Logic	Intel 945GMS + ICH7-M Chipset	
Memory	512MB On Board Memory 64-bit Wide DDRII (DDR2) Data Channel One 200 Pin SO-DIMM Sockets Supporting DDRII (DDR2) 533 MHz Memory Expandable up to 1.5GB (256/ 512/ 1024 MB DDRII Modules) (Note: Do Not Use Other Module Types)	
Security	Security (Kensington® Type) Lock Slot Fingerprint ID Support TPM1.2	BIOS Password HDD Password Lock
BIOS	One 8Mb Flash ROM	Phoenix™ BIOS
LCD Options	12.0" XGA (1024*768) Flat Panel TFT LCD	
Video Adapter	Intel 945GMS Integration Intel® Graphics Media Accelerator 950 (Intel® GMA 950) Dynamic Video Memory Technology DVMT 3.0 - Supports up to 128MB of Video Memory (dynamically allocated from system memory where needed) Supports DualView™	
Storage	<u>Optional Device Drive Bay Options:</u> One Changeable 9.5mm(h) Optical Device (CD/DVD) Type Drive (see <i>"Optional" on page 1 - 3</i> for drive options) <u>Hard Disk Bay:</u> Easy Changeable 2.5" OR 1.8" , 9.5mm (h) Hard Disk (HDD) with PATA (Parallel) Interface	
Audio	AZALIA High Definition Audio Interface 3D Stereo Enhanced Sound System Sound-Blaster PRO™ Compatible	1 * Built-In Monaural Speaker Built-In Microphone

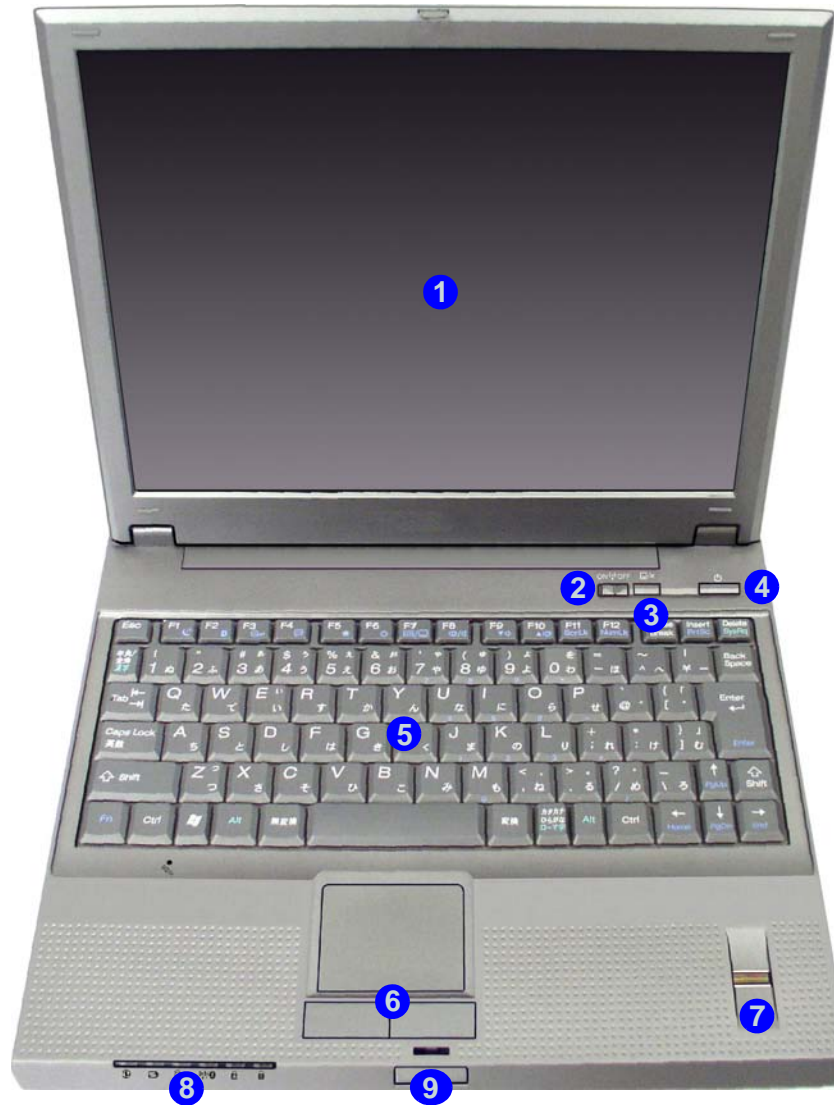
Feature	Specification	
Keyboard & Pointing Device	Winkey Keyboard	Built-In TouchPad
PCMCIA	One Type-II PCMCIA (3.3V/5V) CardBus PC Card Slot	
Card Reader	Embedded 4-in-1 Card Reader (MS/ MS PRO/ SD/ MMC)	
Interface	Three USB 2.0 Ports (1.1 Compatible) One External Monitor Port One Headphone-Out Jack One Microphone-In Jack	One RJ-11 Modem Jack One RJ-45 LAN Jack One DC-in Jack One Mini-IEEE 1394 Port
Communication	AZALIA 56K Fax Modem - V.90 & V.92 Compliant 10/100M Fast Ethernet LAN Intel PRO/Wireless 3945ABG PCIe Interface Wireless LAN Module (Option) USB (2.0) Bluetooth Module (Option)	
Power Management	Supports ACPI 2.0 and APM v 1.2	Supports Wake On Modem Ring Supports Wake On LAN
Power	Full Range AC/DC Adapter - AC Input 100 ~ 240V, 50 ~ 60Hz / DC Output 18.5V, 3.5A 4 Cell Smart Lithium-Ion Battery Pack, 5200mAH, 38.48W 10 Cell Smart Lithium-Ion Battery Pack, 13000mAH, 96.2W	
Environmental Spec	Temperature Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C	Relative Humidity Operating: 20% ~ 80% Non-Operating: 10% ~ 90%
Dimensions & Weight	281mm (w) * 237mm (h) * 32 - 35mm (d)	1.2kg (with 1.8" 30GB HDD, DVD Dual & 4 Cell Battery)
Optional	<u>Optical Device Module Options:</u> Dummy ODD DVD-ROM Drive Module DVD/CD-RW Combo Drive Module DVD Dual - Supporting Super MULTI Drive Module USB (2.0) Bluetooth Module (Including Bluetooth Cable)	Intel PRO/Wireless 3945ABG PCIe Interface Wireless LAN Module (Option) 10 Cell Smart Lithium-Ion Battery Pack, 13000mAH, 96.2W

Introduction

Figure 1
Top View - LCD Open

1. LCD
2. WLAN Power Switch
3. TouchPad Power Button
4. Power Button
5. Keyboard
6. TouchPad and Buttons
7. Fingerprint Reader
8. LED Indicators
9. LCD Latch

External Locator - Top View with LCD Panel Open



External Locator - Front & Rear Views

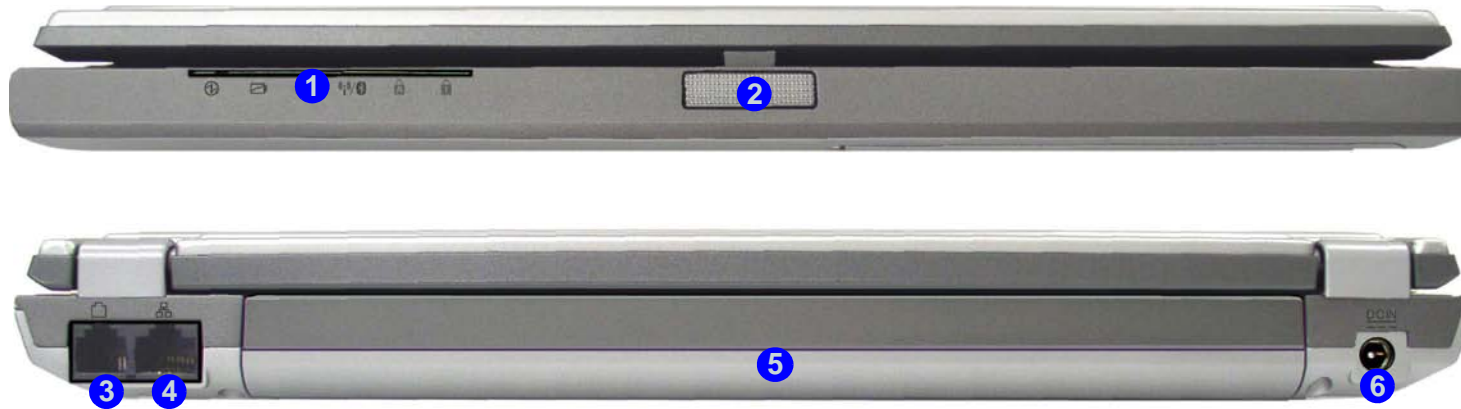


Figure 2
Front & Rear Views

1. LED Indicators
2. LCD Latch
3. RJ-11 Phone Jack
4. RJ-45 LAN Jack
5. Battery
6. DC-In Jack

Introduction

Figure 3
Left & Right Side View

External Locator - Left & Right Side View

1. Vent/Fan Intake/Outlet
2. External Monitor Port
3. 1 * USB 2.0 Port
4. Mini-IEEE 1394 Port
5. 4-in-1 Card Reader
6. PC Card Slot
7. Headphone-Out/ Speaker-Out Jack
8. Microphone-In Jack
9. 2 * USB 2.0 Ports
10. Optical (CD/DVD) Device Drive Bay
11. Security Lock Slot



External Locator - Bottom View

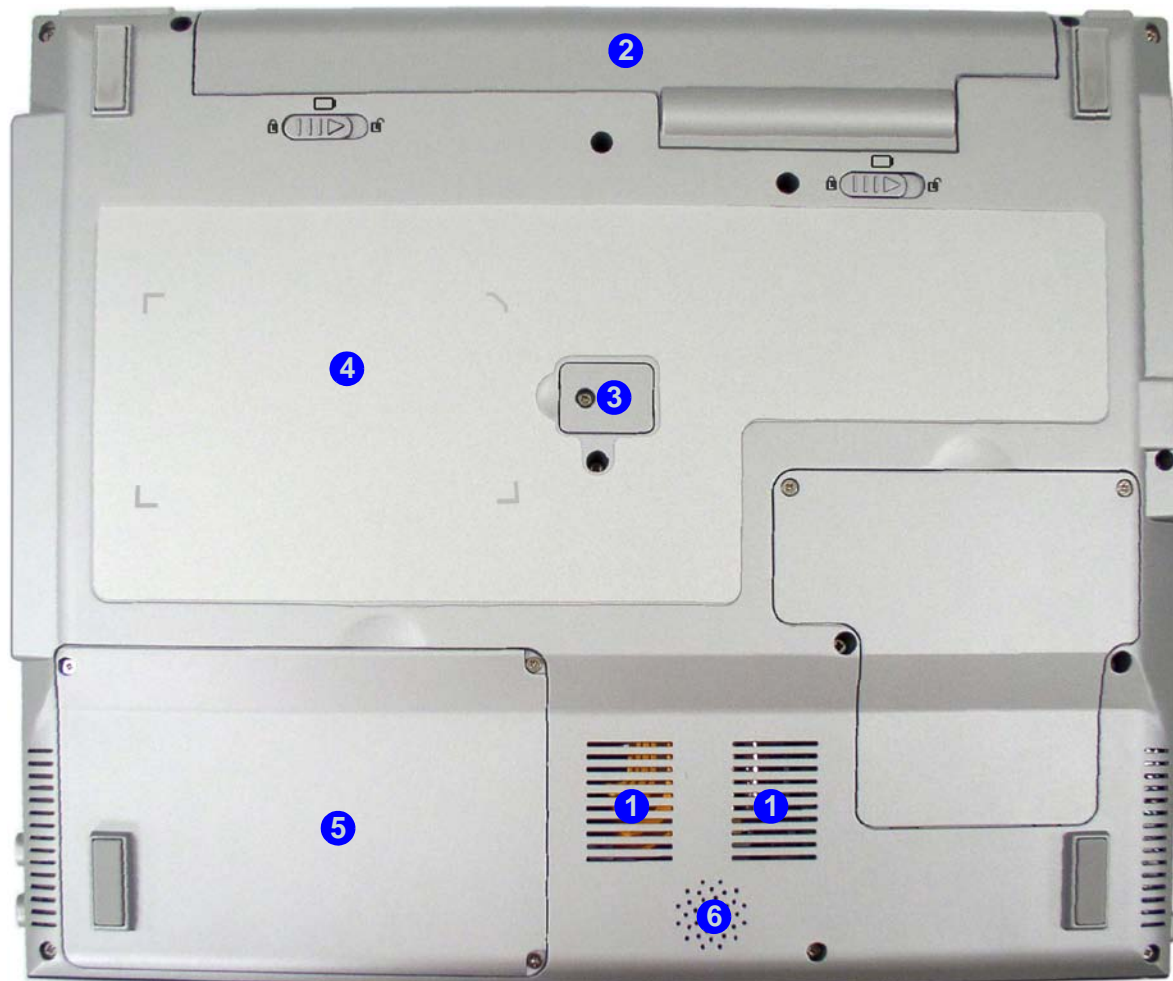


Figure 4
Bottom View

1. Vent/Fan Intake/
Outlet
2. Battery
3. Optical (CD/DVD)
Device Drive
Release Cover
4. Component Bay
Cover
5. Hard Disk Drive
Bay Cover
6. Speaker



Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Introduction

Figure 5
**Mainboard Top
Key Parts**

1. PCMCIA Controller
TI PCI7412
2. Clock Generator
3. PC Card Assembly
4. 3 IN 1 Card Reader
5. Marvell 88E8038
LAN Controller
6. On Board DDRII
Memory
7. VCORE

M62N Mainboard Overview - Top (Key Parts)

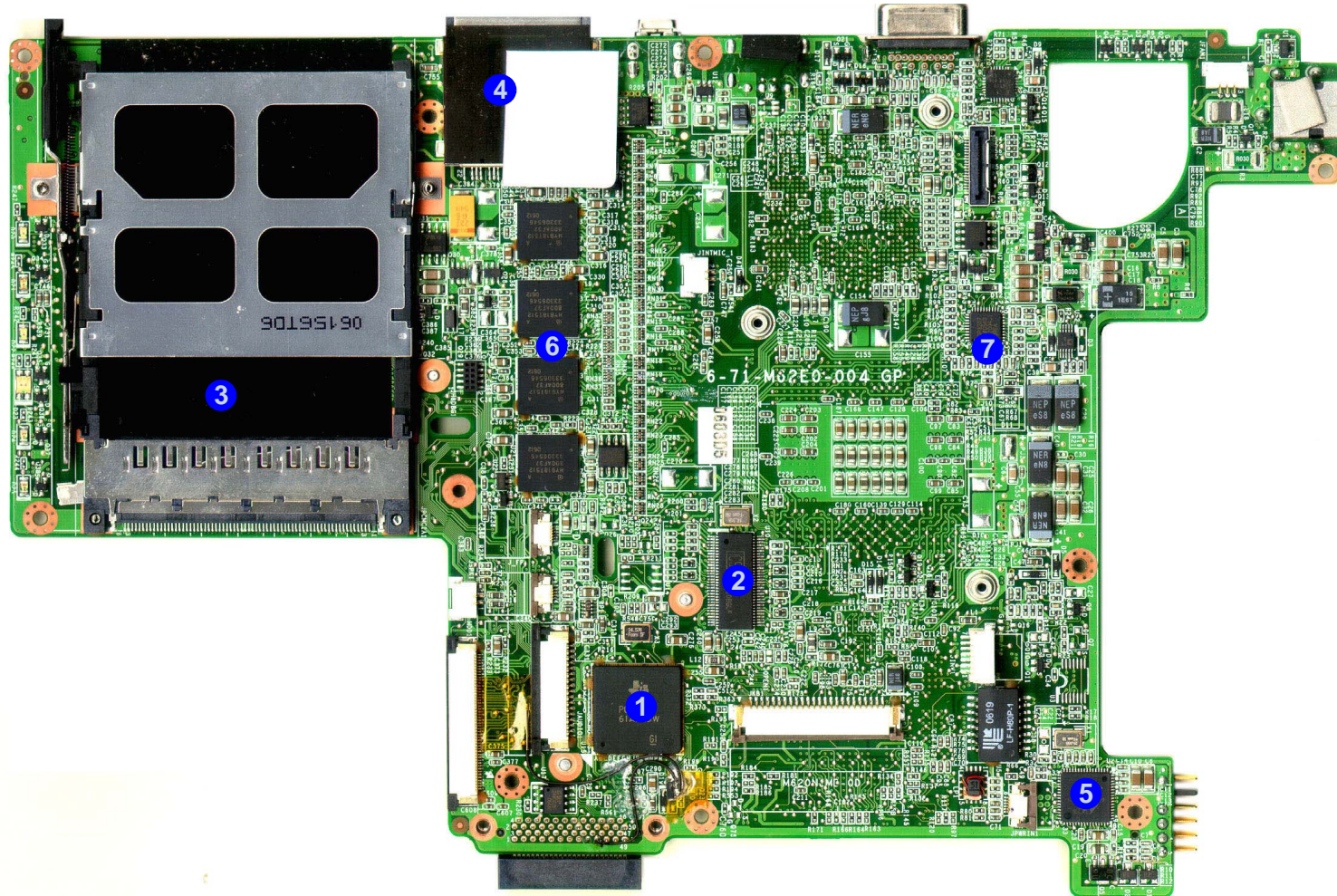
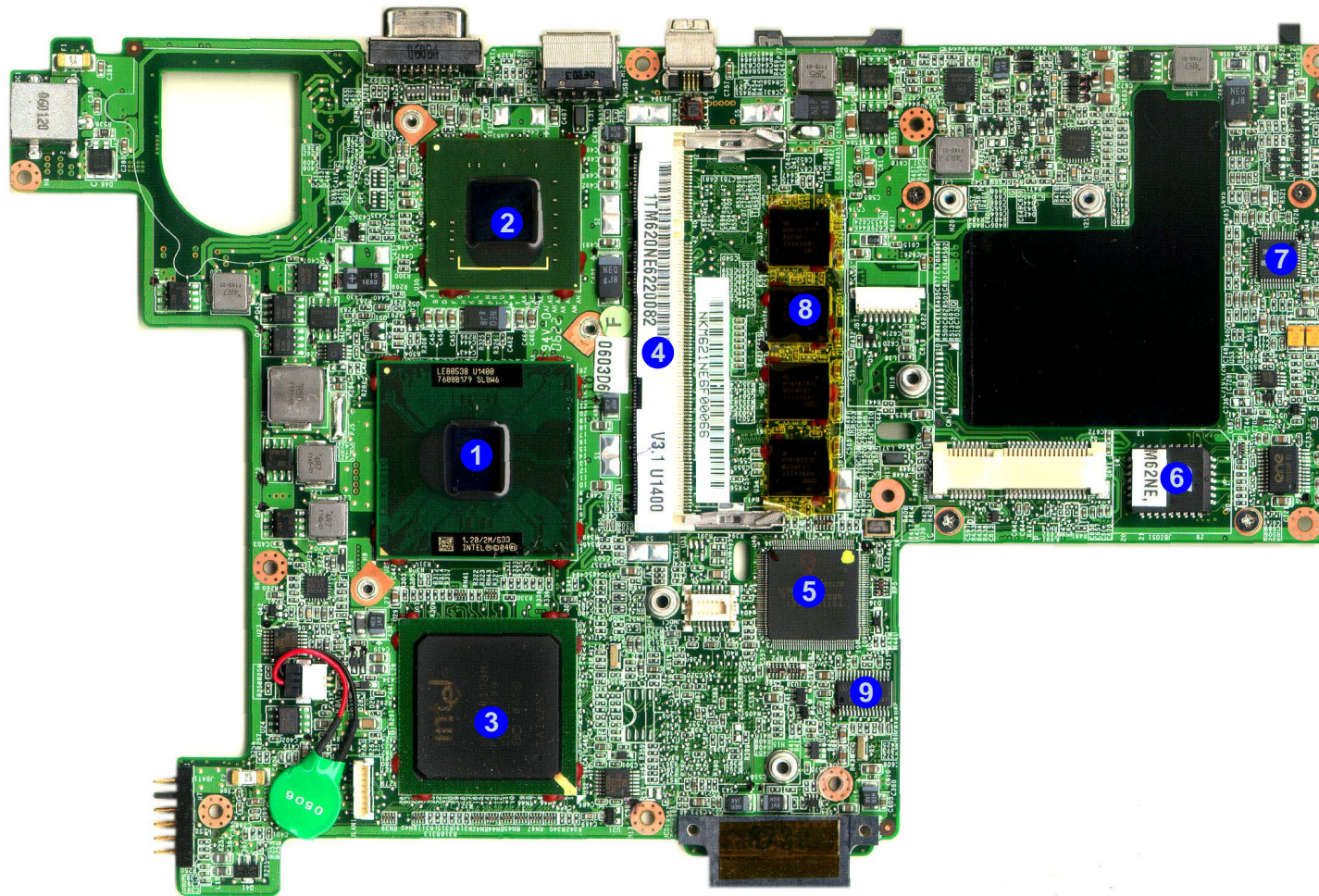


Figure 6
**Mainboard Bottom
Key Parts**

1. Yonah Processor
2. North Bridge 945GMS
3. South Bridge ICH7-M 652 BGA
4. Memory Slot DDRII SODIMM
5. H8/2111
6. Flash ROM BIOS
7. Azalia Codec ALC260
8. On Board DDRII Memory
9. TPM SLB9635TT

M62N Mainboard Overview - Bottom (Key Parts)

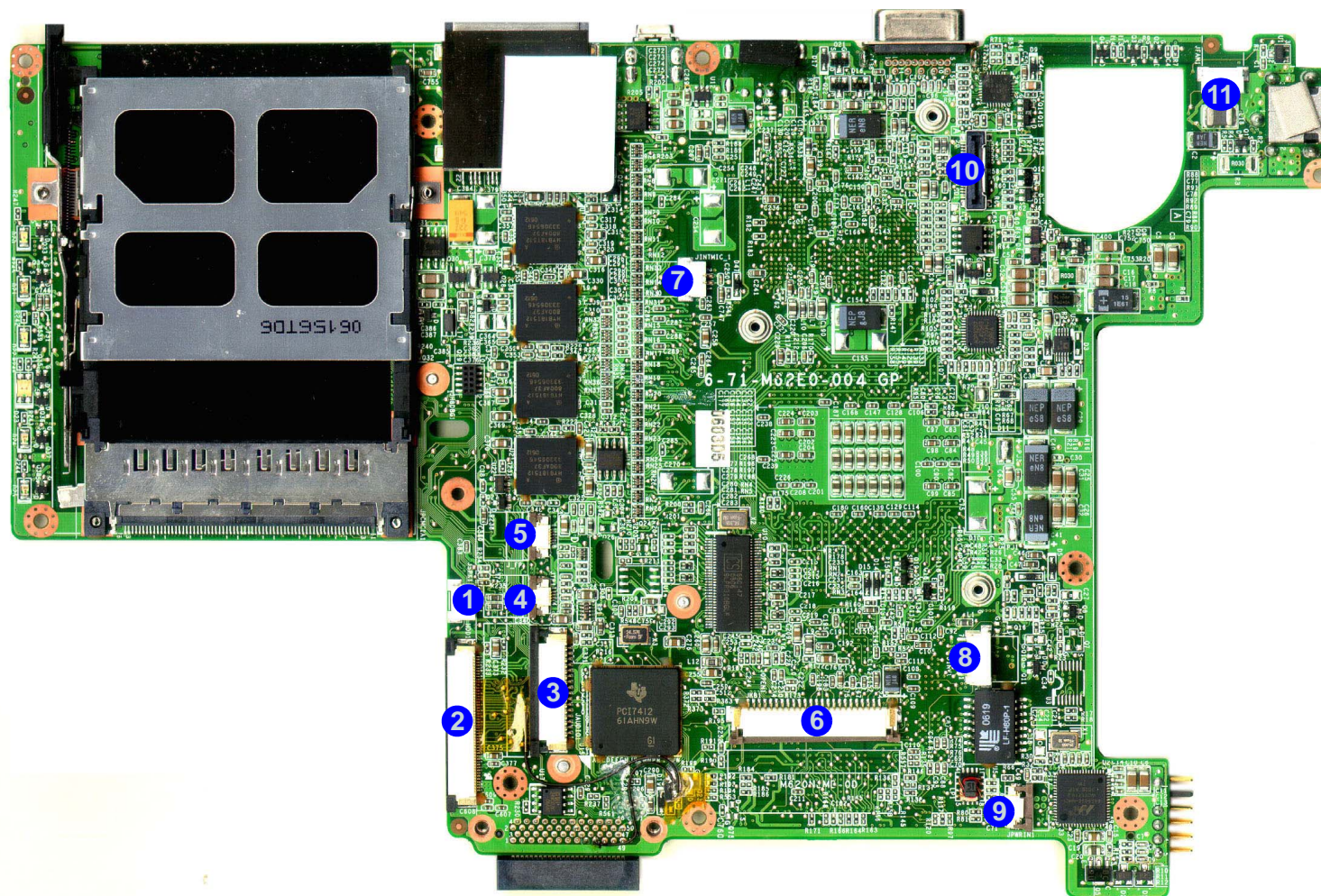


Introduction

Figure 7
**Mainboard Top
Connectors**

1. Speaker (JSPK1)
2. Hard Disk (JHDD1)
3. Audio Board (JAUDIO1)
4. TouchPad (JTP1)
5. Fingerprint Reader (J_FP)
6. Keyboard (JKB1)
7. Internal Microphone (JINTMIC1)
8. Inverter (JINV1)
9. Power Cable (JPWRIN1)
10. LDC (JLCD1)
11. Fan (JFAN1)

M62N Mainboard Overview - Top (Connectors)



M62N Mainboard Overview - Bottom (Connectors)

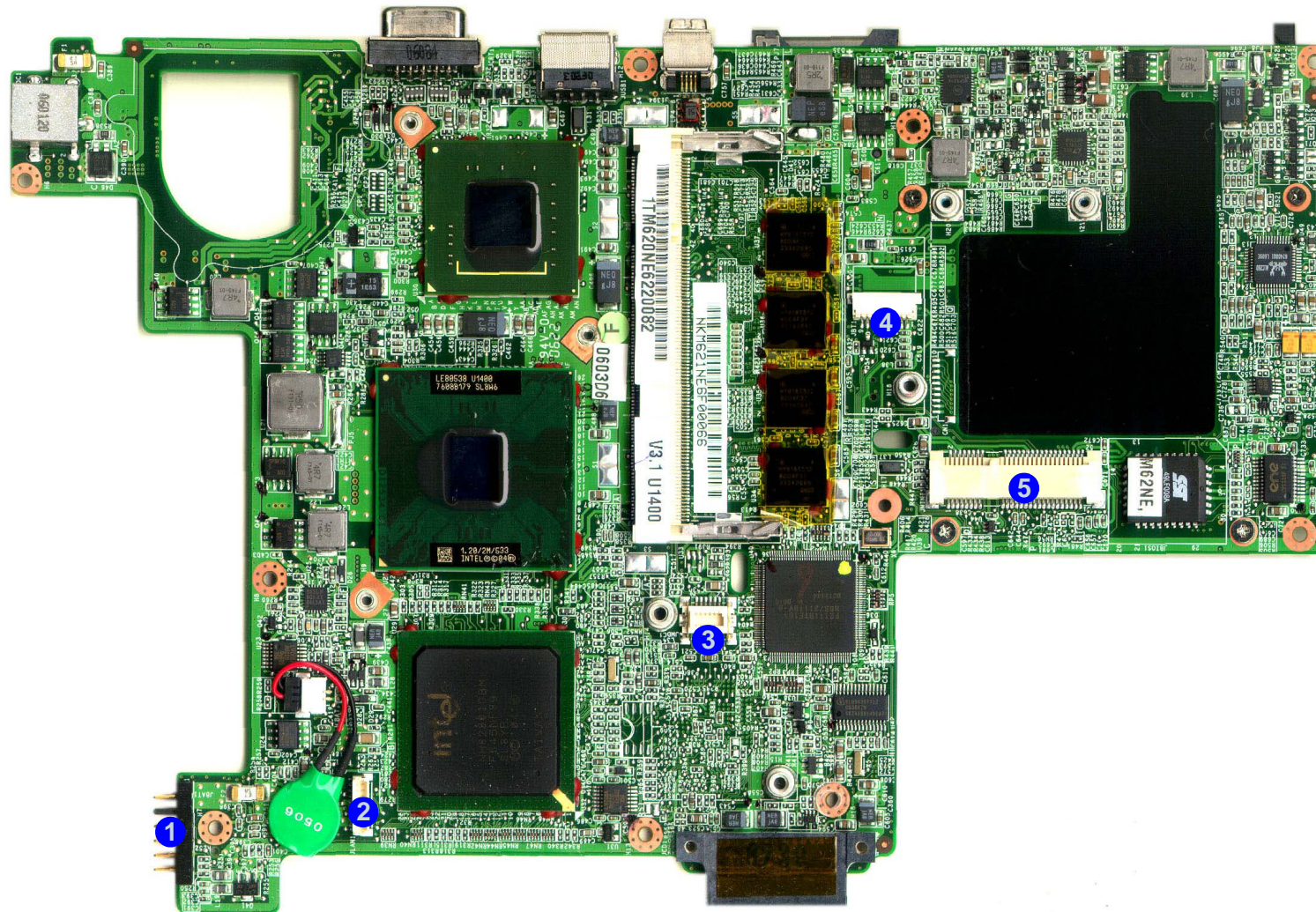


Figure 8
**Mainboard Bottom
Connectors**

1. Battery (JBAT1)
2. Network (JLAN1)
3. Modem (JMDC1)
4. Bluetooth (JBT1)
5. Mini Card for WLAN Module(JMINI1)


2: Disassembly



Overview

This chapter provides step-by-step instructions for disassembling the *M62NC* series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, CD device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note:** The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will also provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.


Information
Warning

Disassembly

NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it.** Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it.** Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference.** Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power.** Avoid accidental shocks, discharges or explosions.
 - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
 - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge.** ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion.** As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean.** Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components.** When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery [page 2 - 5](#)

To remove the HDD:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)

To remove the Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the Optical device [page 2 - 10](#)

To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the system memory [page 2 - 11](#)

To remove the Wireless LAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the WLAN module [page 2 - 13](#)

To remove the Bluetooth Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the Bluetooth module [page 2 - 15](#)

To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 17](#)

To remove the Modem Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the TV Tuner Card [page 2 - 18](#)

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery. The computer may come with a **4 cell battery** **4**, or a **10 cell battery** **5**.

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow (it will remain in place).
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Slide the battery out of the computer in the direction of the arrow **3**.

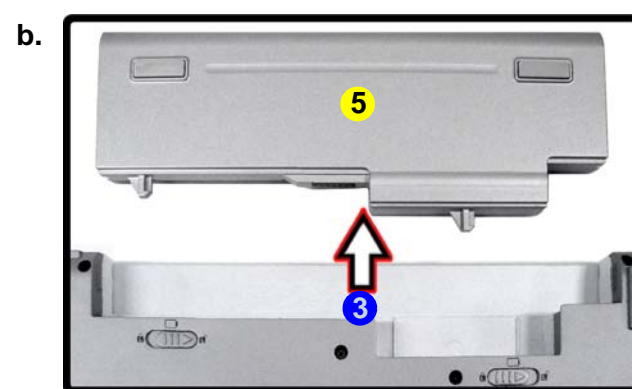
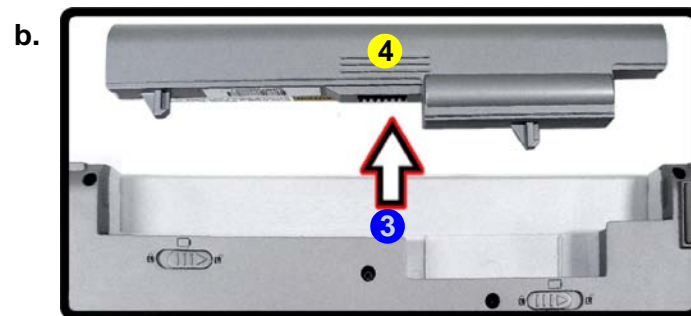
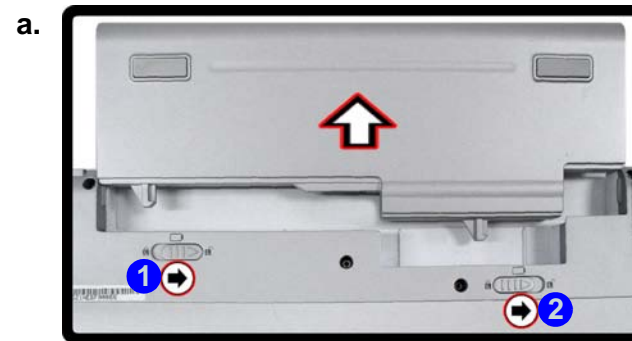


Figure 1
Battery Removal

- a. Slide the latch at point 1 in the direction of the arrow, and slide the latch at point 2 towards the unlock symbol and hold it in place.
- b. Slide the battery out.



- 4. 4 * Cell Battery
- 5. 10 * Cell Battery

Disassembly

Figure 2
HDD Assembly Removal

Removing the Hard Disk Drive

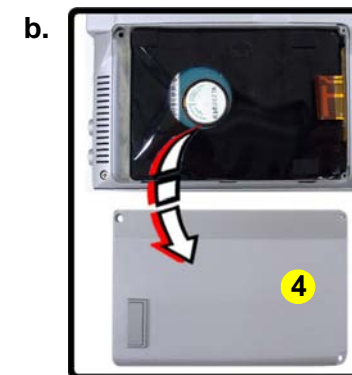
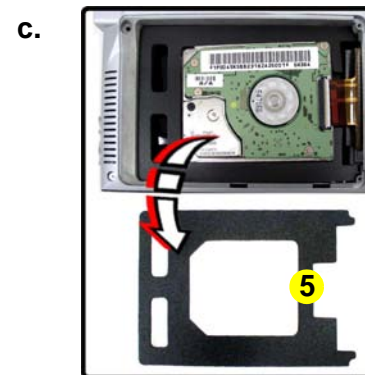
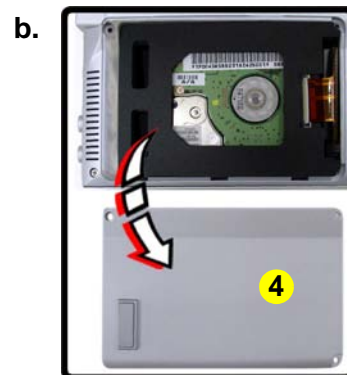
The hard disk drive can be taken out to accommodate other 2.5" or 1.8" Parallel (PATA) hard disks with a height of 9.5mm (h) (see *"Storage" on page 1 - 2*).

- a. Remove the screws.
- b. Remove the cover.
- c. Remove the foam top cover for 1.8" hard disks.

1. Turn **off** the computer, and turn it over and remove the battery (*page 2 - 5*).
2. Locate the hard disk bay cover and remove the screws from points ① - ③.



3. Remove the hard disk bay cover ④ (and foam top cover ⑤ for 1.8" hard disks).



4. HDD Bay Cover
5. Top Sponge Module for 1.8" Hard Disks

- 3 Screws

4. Carefully lift the hard disk assembly up and disconnect the cable at point 6.

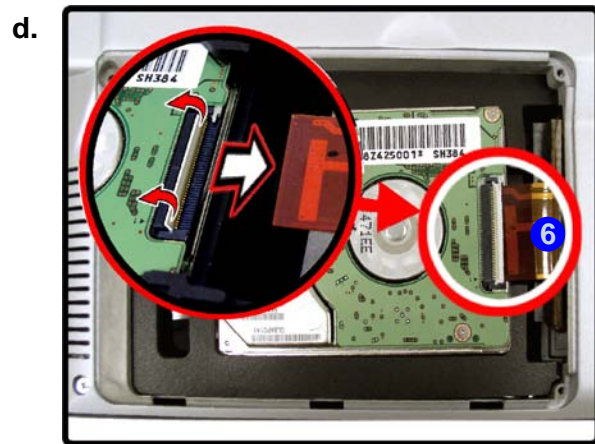
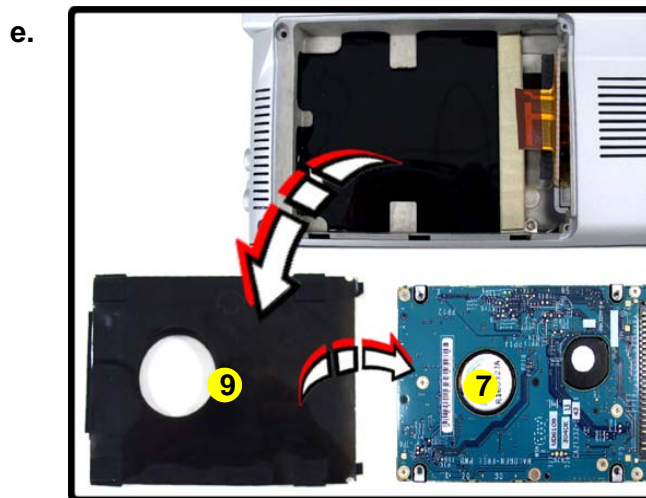
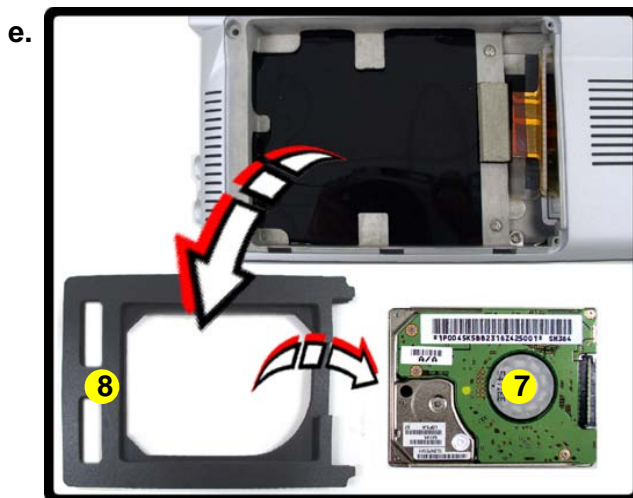


Figure 3
**HDD Assembly
Removal (cont'd)**

- d. Disconnect the cable.
- e. Remove the hard disk and case.

5. Remove the hard disk 7 from the bay, and then remove the case 8.



6. Reverse the process to install any new hard disk; however if you are replacing a hard disk with a hard disk of a different size from that originally provided in the bay, then see overleaf.

- 7. HDD
- 8. Bottom Sponge Module for 1.8" Hard Disks
- 9. 2.5" HDD Mylar Case

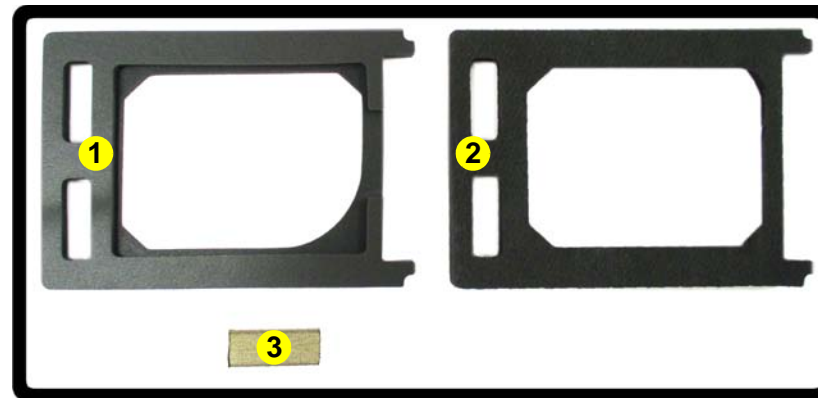
Disassembly

Figure 4
Changing HDD Sizes

a. Remove the original gasket.

Changing Hard Disk Sizes

1. The original packaging provides a case and a protective gasket appropriate for the hard disk.
2. Remove the original gasket from its location in the bay.

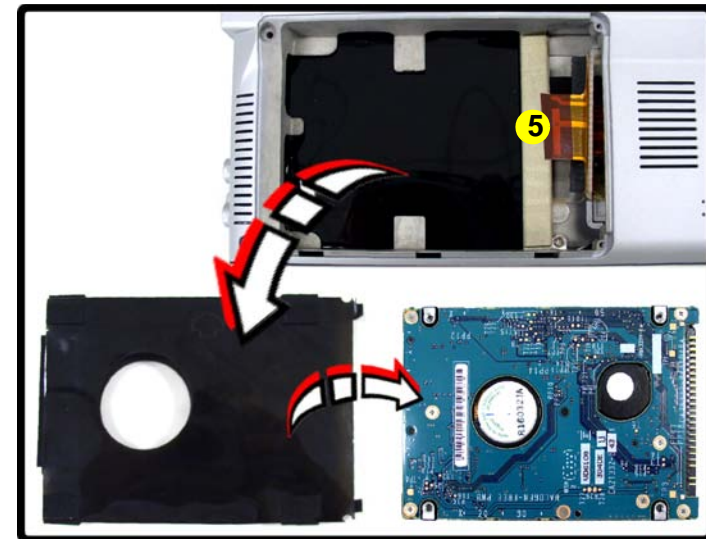
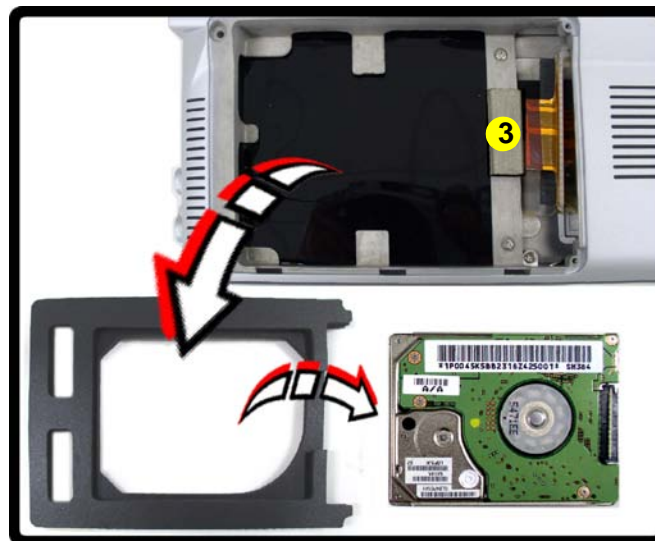


1.8" Hard Disk Sponge & Gasket



2.5" Hard Disk Mylar & Gasket

a.



1. Top Sponge Module for 1.8" Hard Disks
2. Bottom Sponge Module for 1.8" Hard Disks
3. Gasket for 1.8" Hard Disks
4. 2.5" HDD Mylar Case
5. Gasket for 2.5" Hard Disks.

Figure 5
Changing HDD Sizes
(Cont'd)

b. Stick the gasket in the appropriate location.

3. Remove the backing from the new protective gasket.
4. Follow the instructions below, depending on which disk you are installing.

If you are replacing a 1.8" hard disk with a 2.5" hard disk:

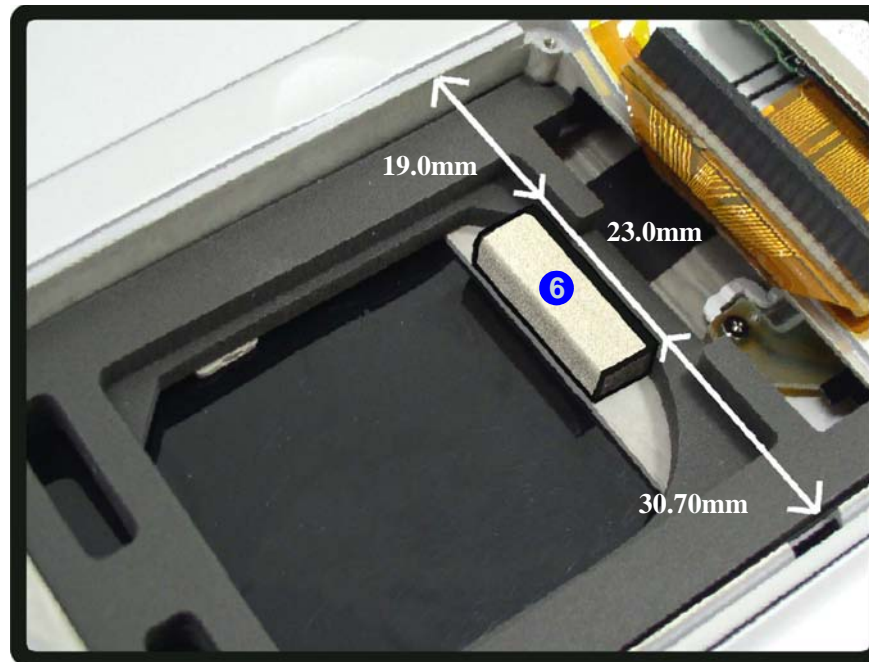
- Stick the 2.5" protective gasket in the appropriate location **5** (*Figure 4a*).
- Insert the 2.5" hard disk into the case, attach it to the connector and replace the mylar case and screws.

If you are replacing a 2.5" hard disk with a 1.8" hard disk:

- Place the sponge bottom cover inside the bay.
- Stick the 1.8" protective gasket in the location illustrated **6** (*Figure 5*) as per the approximate dimensions outlined.

Attach the disk to the connector, place the foam top cover inside the bay and replace the case cover and screws.

b.



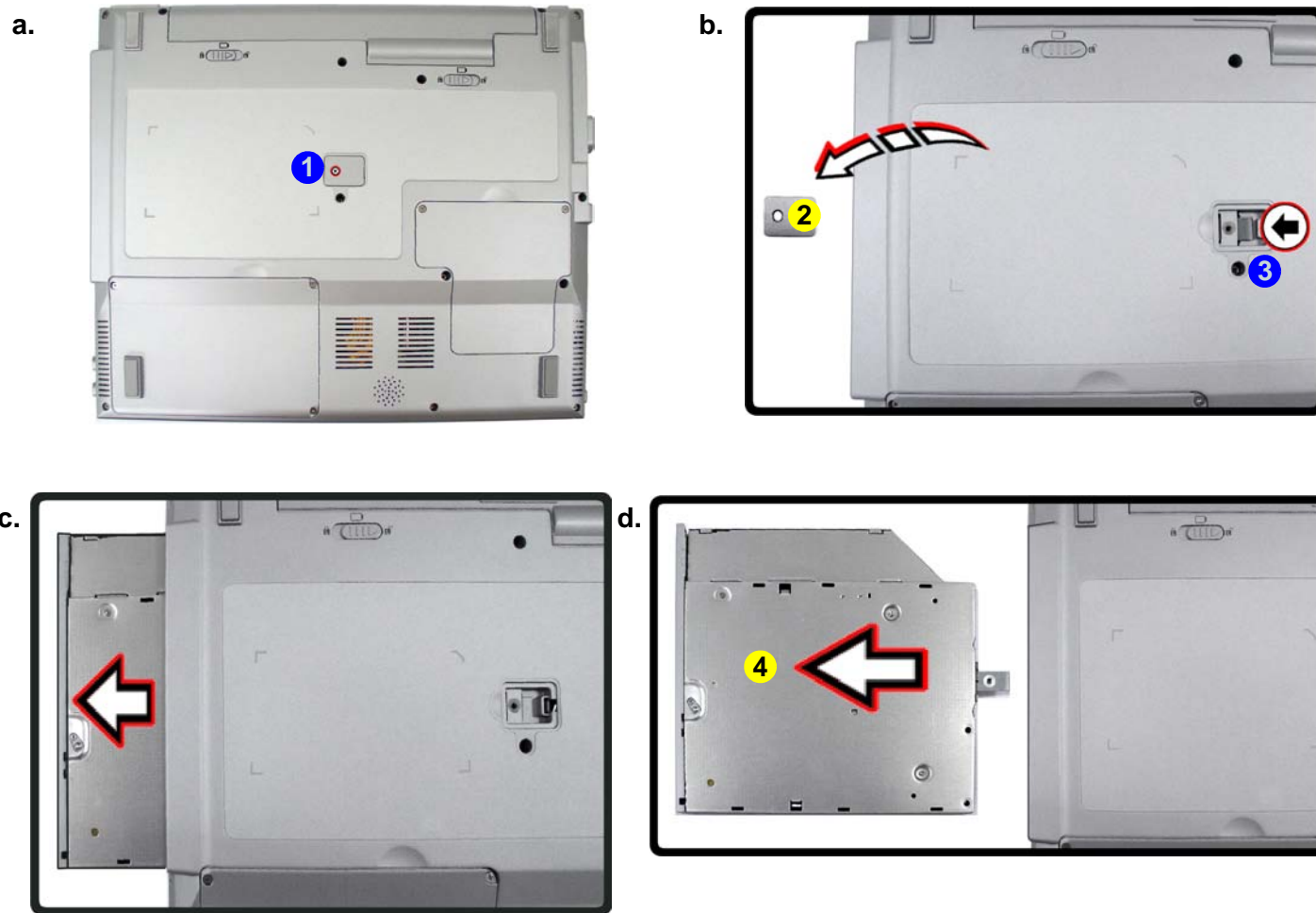
Disassembly

Figure 6
**HDD Assembly
Removal**

- a. Remove the screw.
- b. Remove the cover.
- c. Push the device out.
- d. Remove the device.

Removing the Optical (CD/DVD) Device Drive

1. Turn **off** the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the ODD cover and remove the screw **1** and cover **2**.
3. Use a screwdriver to carefully push out the optical device at point **3**.
4. Reverse the process to install the new device.



- 2. ODD Cover
- 4. Optical Device

- 1 Screw

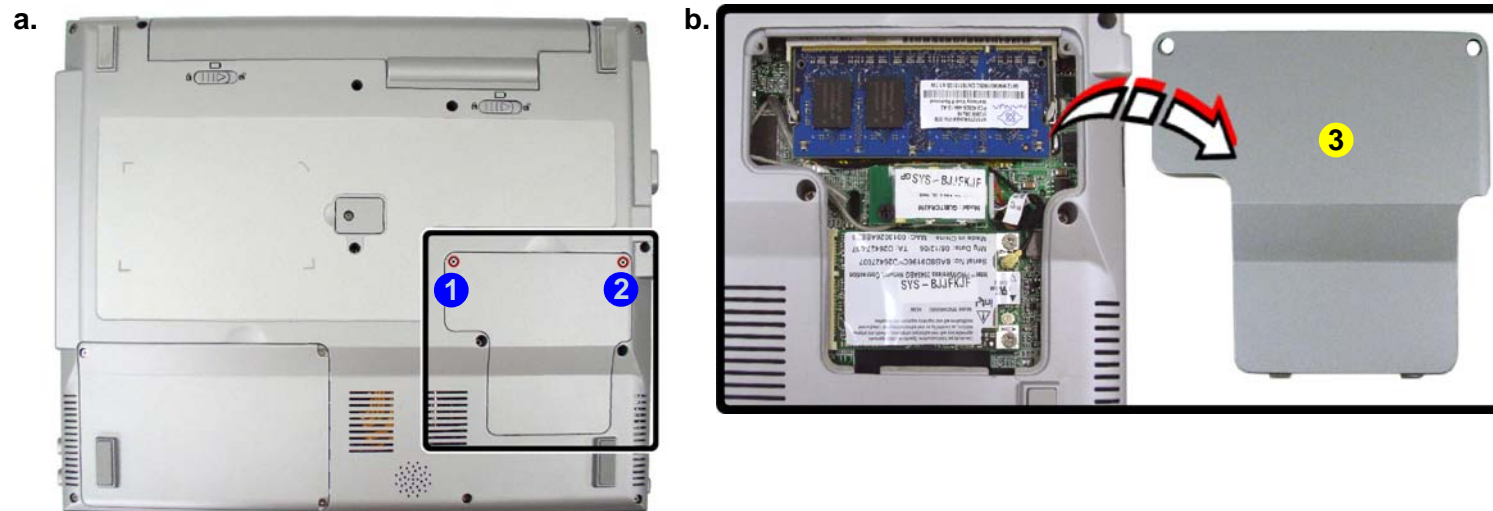
Removing the System Memory (RAM)

The computer has **one** memory socket for 200 pin Small Outline Dual In-line (SO-DIMM) **DDRII (DDR2)** type memory modules (see “**Memory**” on [page 1 - 2](#) for details of supported module types). The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn **off** the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the RAM bay cover and remove screws **1** & **2**.
3. Remove the RAM bay cover **3**.

Figure 7
System Memory Removal

- a. Remove the screws.
- b. Remove the cover.



3. RAM Bay Cover

- 2 Screws

Disassembly

Figure 8
System Memory Removal (Cont'd)

- c. Pull the release latches.
- d. Remove the module.



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.



6. RAM Module

4. Gently pull the two release latches **4** & **5** on the sides of the memory socket.
5. The RAM module **6** will pop-up, and you can remove it.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the cover and screws.
10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

c.



d.



e.



Removing the Wireless LAN Module

1. Turn **off** the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the RAM bay cover and remove screws **1** & **2**.
3. Remove the RAM bay cover **3**.

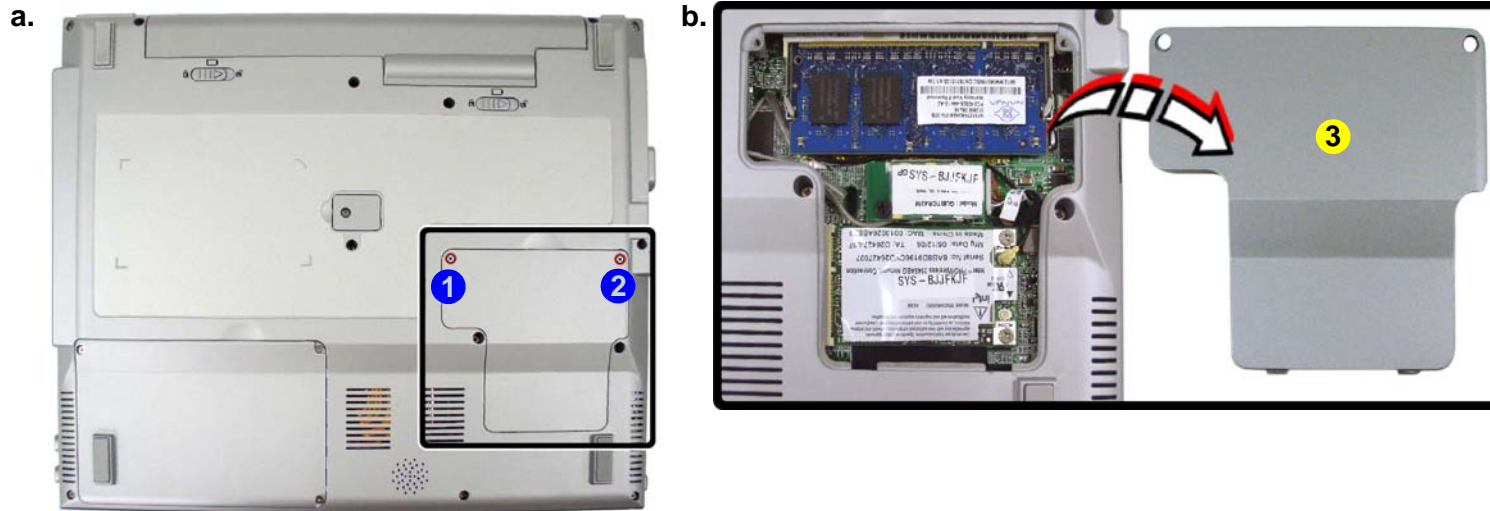


Figure 9
**WLAN Module
Removal**

- a. Remove the screws.
- b. Remove the cover.



3. RAM Bay Cover

- 2 Screws

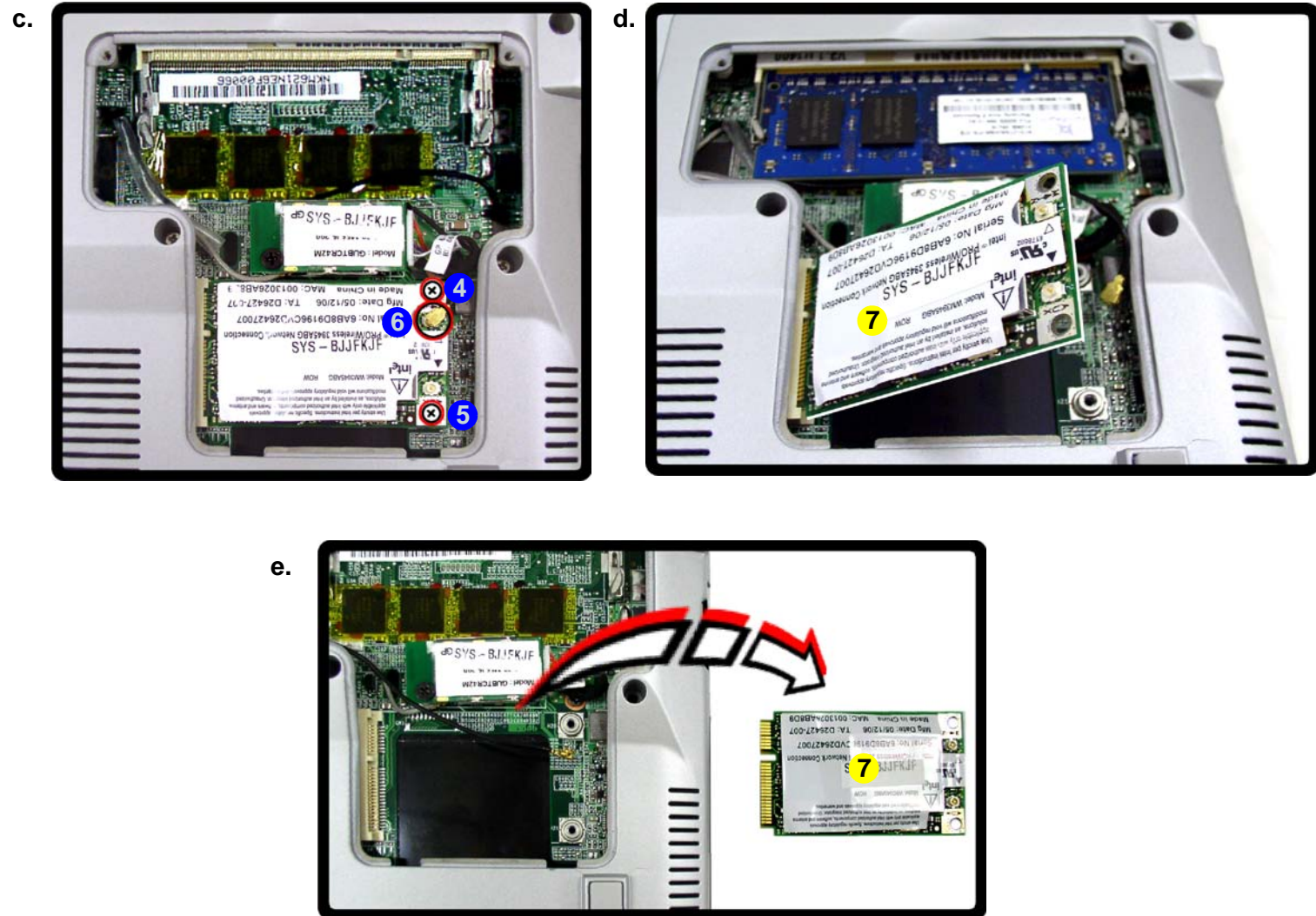
Disassembly

Figure 10
**Wireless LAN
Module Removal**

- c. Remove the screws and disconnect the cable.
- d. Lift the Wireless LAN module up.
- e. Remove the WLAN module.

Note: Make sure you reconnect the antenna cable to the “Main” socket (*Figure c*). The **WLAN cable** is colored **black**.

4. Remove screws **4** & **5**, and carefully disconnect cable **6**.
5. Remove the Wireless LAN module **7**.



7. Wireless LAN Module

- 2 Screws

Removing the Bluetooth Module

1. Turn **off** the computer, and turn it over and remove the battery ([page 2 - 5](#)).
2. Locate the RAM bay cover and remove screws **1** & **2**.
3. Remove the RAM bay cover **3**.

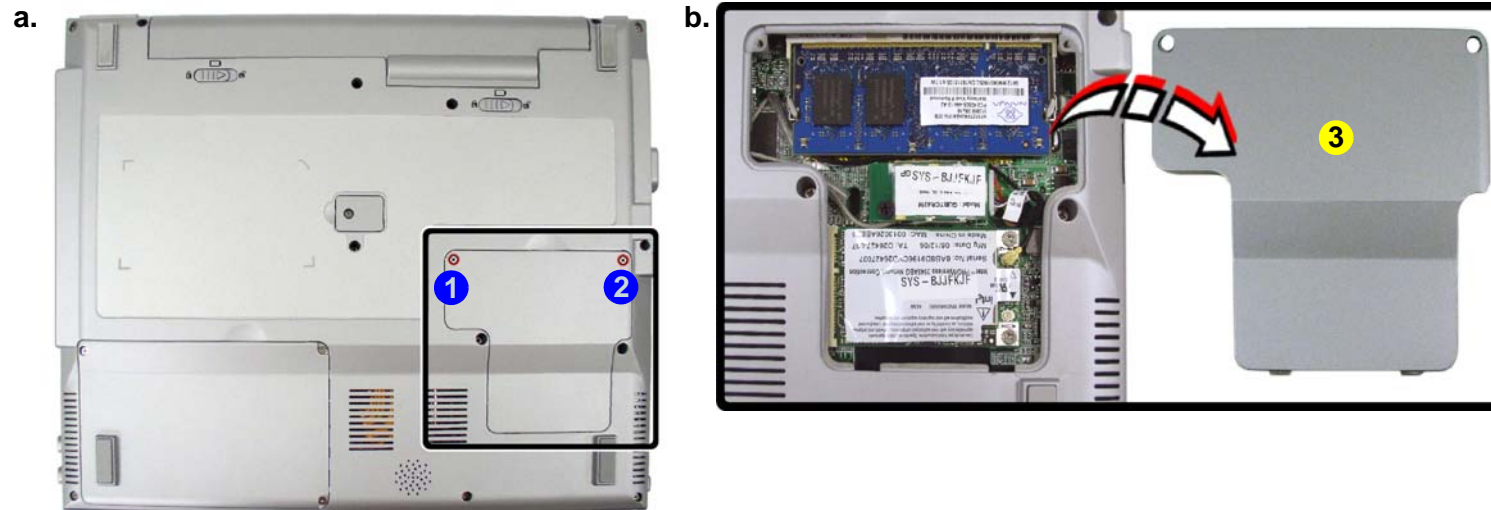


Figure 11
Bluetooth Module Removal

- a. Remove the screws.
- b. Remove the cover.



3. RAM Bay Cover

- 2 Screws

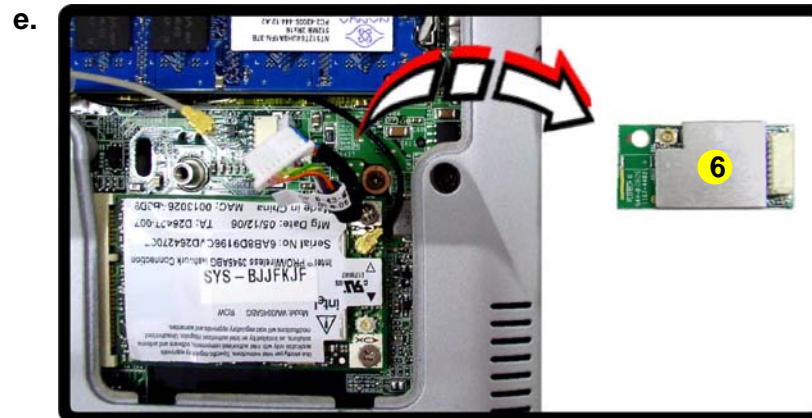
Disassembly

Figure 12
Bluetooth Module Removal

- c. Remove the screw.
- d. Disconnect the cable.
- e. Remove the Bluetooth module.

Note: The Bluetooth cable is colored gray.

- 4. Remove screw ④ then disconnect the cable ⑤.
- 5. Lift the Bluetooth module ⑥ up off the mainboard.



6. Bluetooth Module

- 1 Screw

Removing the Keyboard

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Press the **three** ① - ③ keyboard latches at the top of the keyboard to elevate the keyboard from its normal position (you may need to use a small screwdriver to do this).
3. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable ④ ([Figure b](#)).
4. Disconnect the keyboard ribbon cable ④ from the locking collar socket ⑤.
5. Carefully lift up the keyboard ⑥ ([Figure c](#)) off the computer.

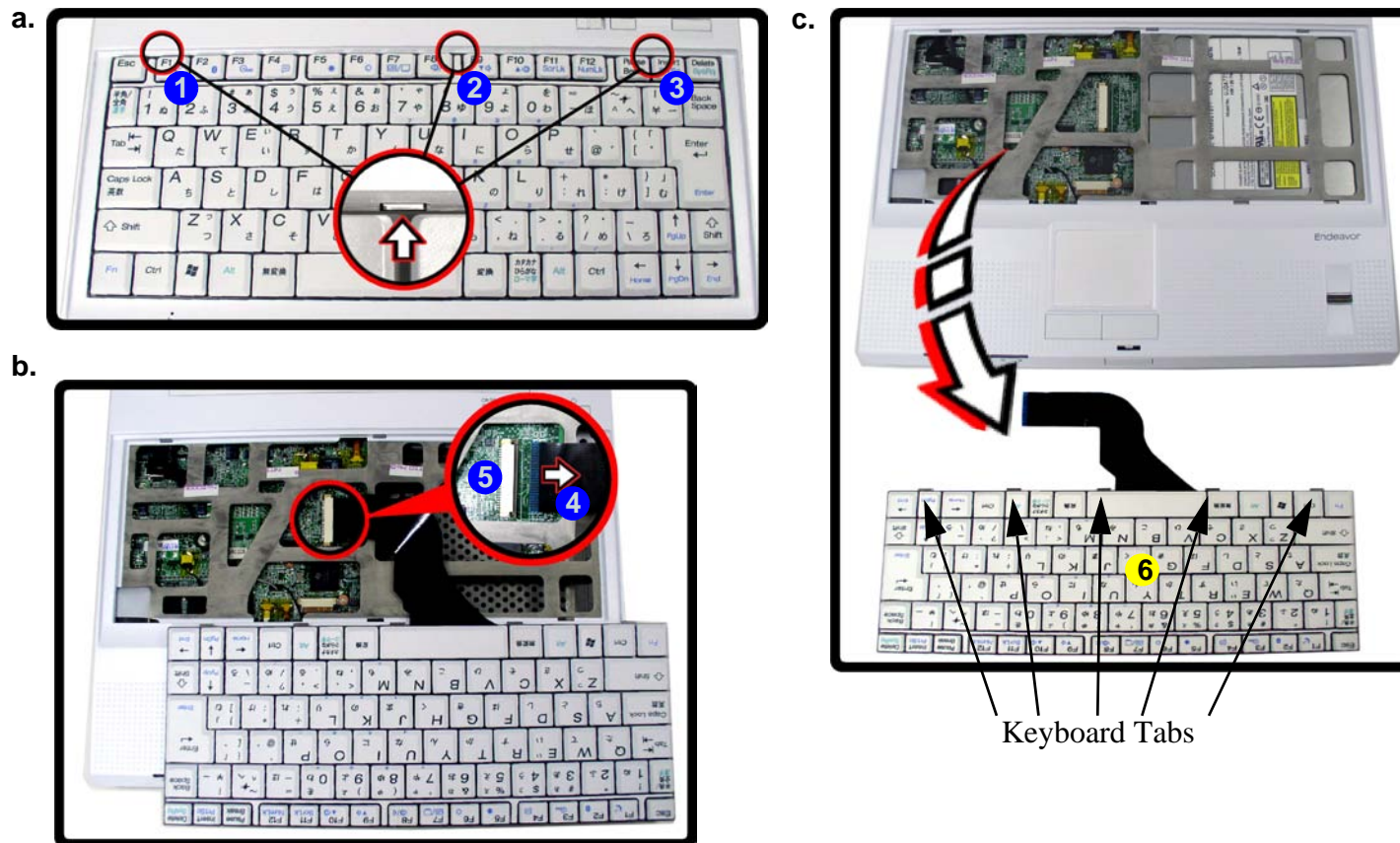


Figure 13
Keyboard Removal

- a. Press the three latches to release the keyboard.
- b. Lift the keyboard up and disconnect the cable from the locking collar.
- c. Remove the keyboard.

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **five** keyboard tabs at the bottom ([Figure c](#)) at the bottom of the keyboard with the slots in the case.

6. Keyboard

Disassembly

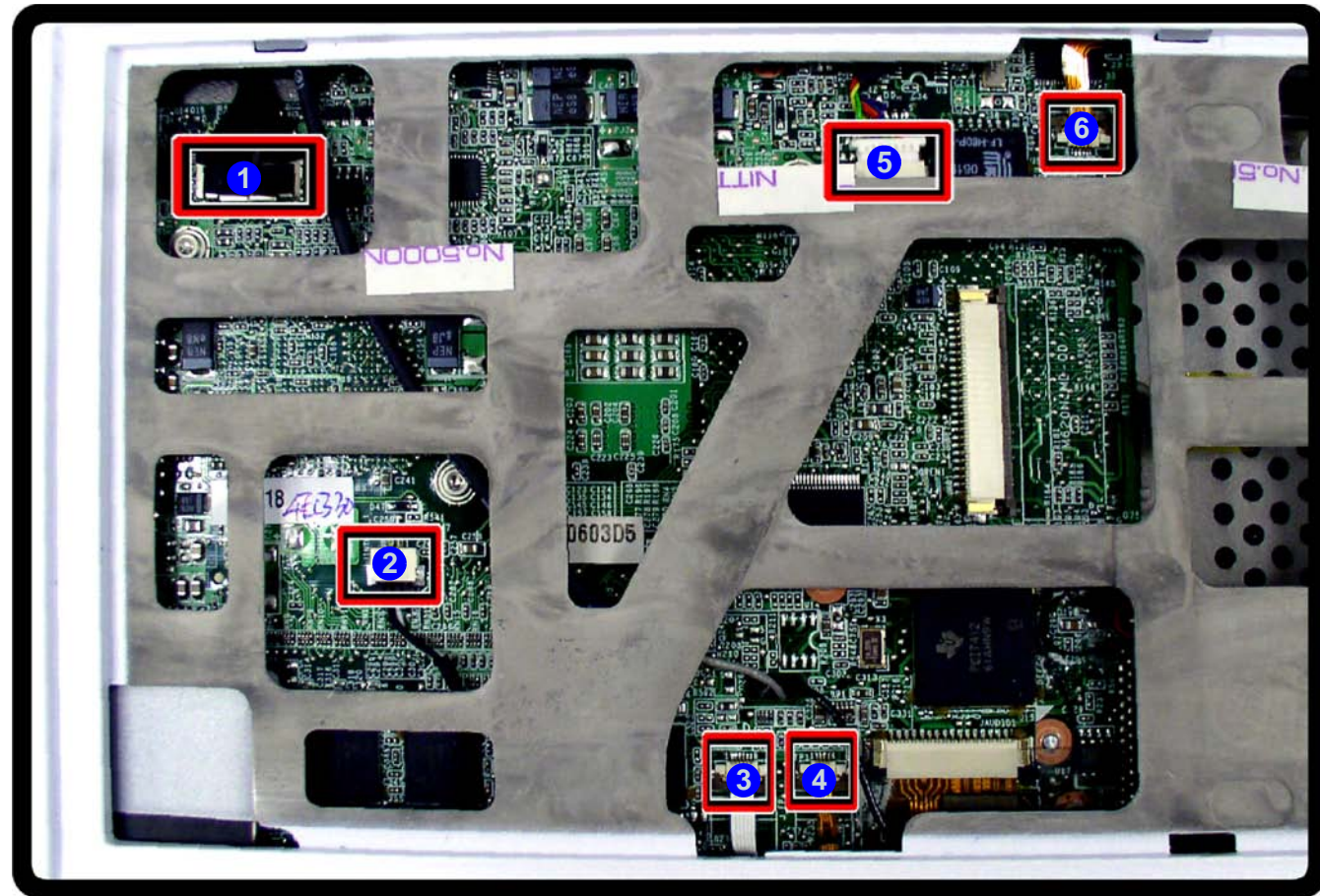
Figure 14
**Modem Module
Removal**

a. Disconnect the cables.

Removing the Modem Module

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)), hard disk drive ([page 2 - 6](#)), optical device ([page 2 - 10](#)), system memory ([page 2 - 11](#)), WLAN module ([page 2 - 13](#)), Bluetooth module ([page 2 - 15](#)) and keyboard ([page 2 - 17](#)).
2. Carefully disconnect the cables at points **1** - **6**.

a.



3. Turn the computer over and remove screws 7 - 19 from the bottom case.
4. Carefully remove the top case assembly 20 from the bottom case assembly 21 (carefully feed the wireless and Bluetooth cables through the hole in the mainboard when separating the case assemblies).
5. Carefully disconnect cables 22 - 25, and remove screw 26.

Figure 15
Modem Module Removal (cont'd)

- b. Remove the screws from the bottom case.
- c. Carefully separate the top and bottom case assemblies.
- d. Disconnect the cables and remove the screw.

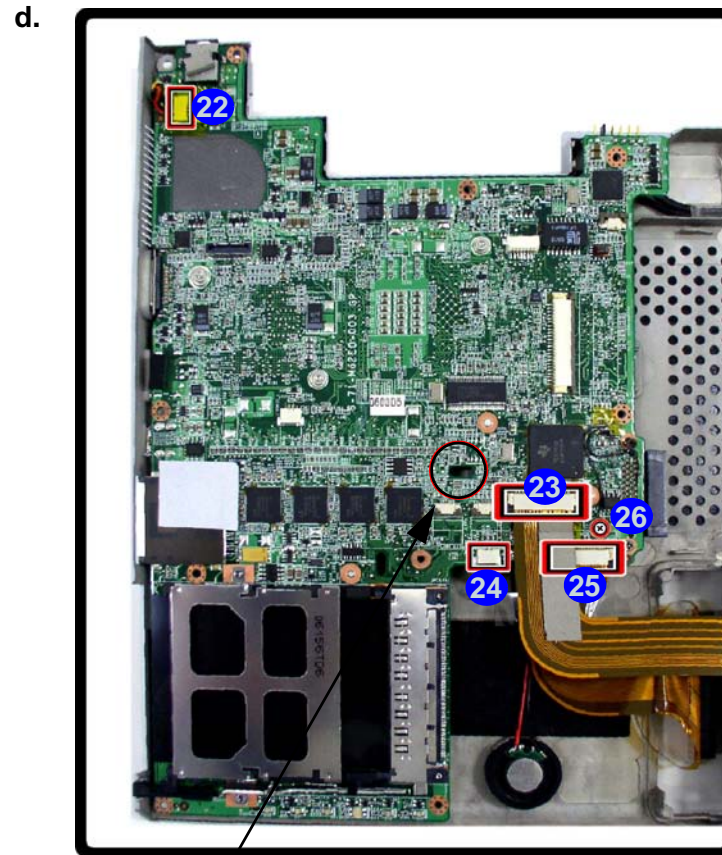
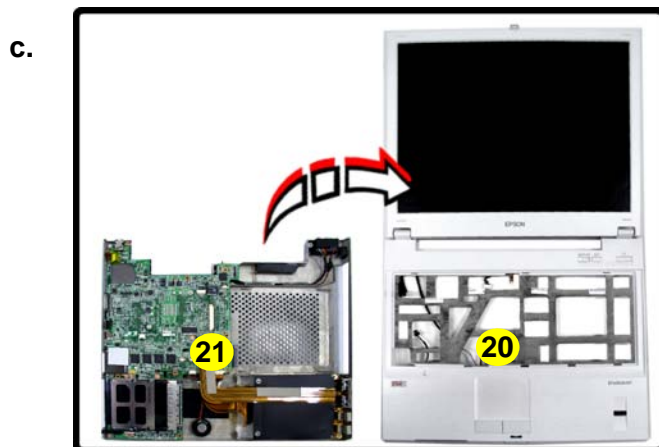
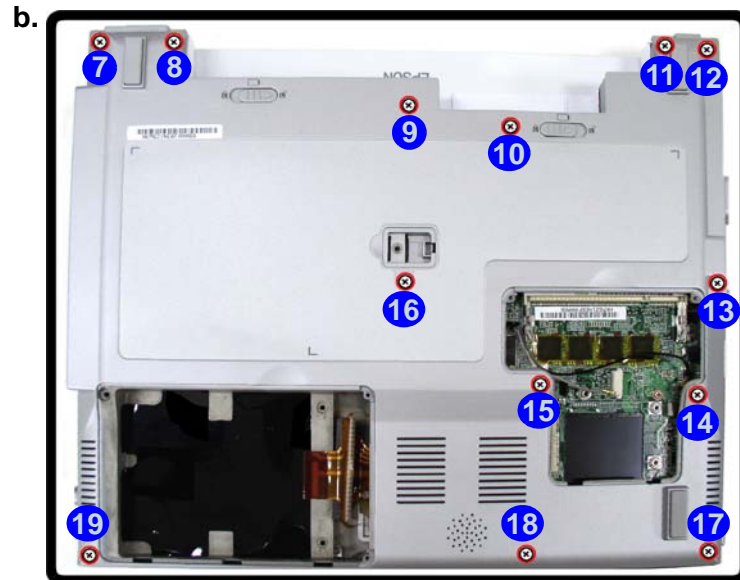


PC Card/4-in-1 Card Reader Warning

Make sure there are no covers or cards in the PCMCIA Card Reader or 4-in-1 card reader before separating the case assemblies.



20. Top Case Assembly
21. Bottom Case Assembly



Carefully feed the WLAN and Bluetooth cables through this hole when separating the top and bottom case assemblies..

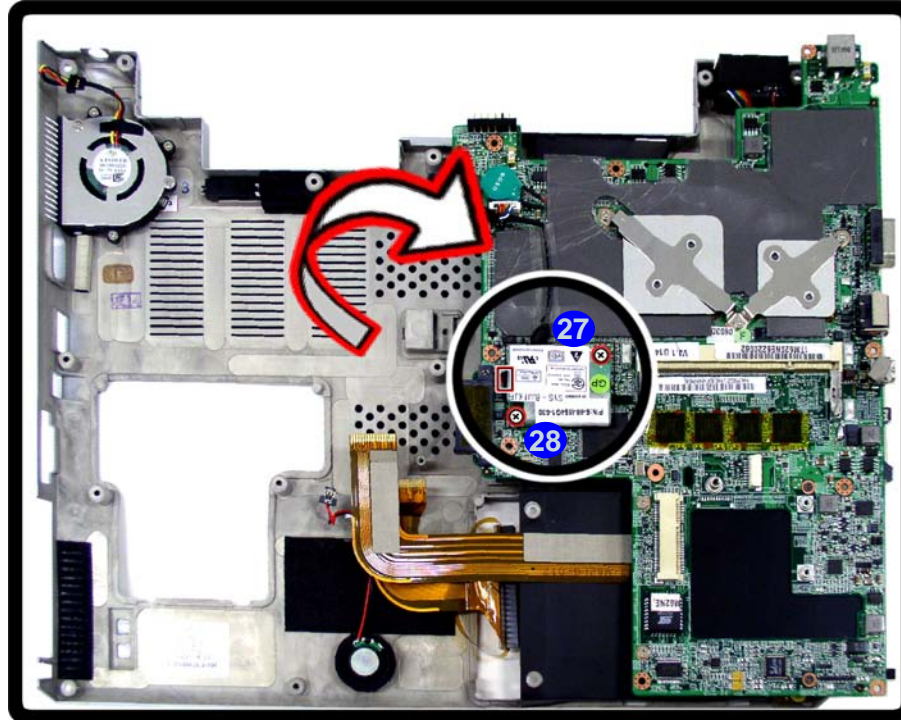
Disassembly

Figure 16
**Modem Module
Removal (cont'd)**

- e. Remove the screws from the modem module.
- f. Remove the modem module.

- 6. Turn the mainboard over and remove screws 27 & 28.
- 7. Remove the modem module 29.

e.



f.



29. Modem Module

Appendix A: Part Lists

This appendix breaks down the *M62NC* series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

Part Lists

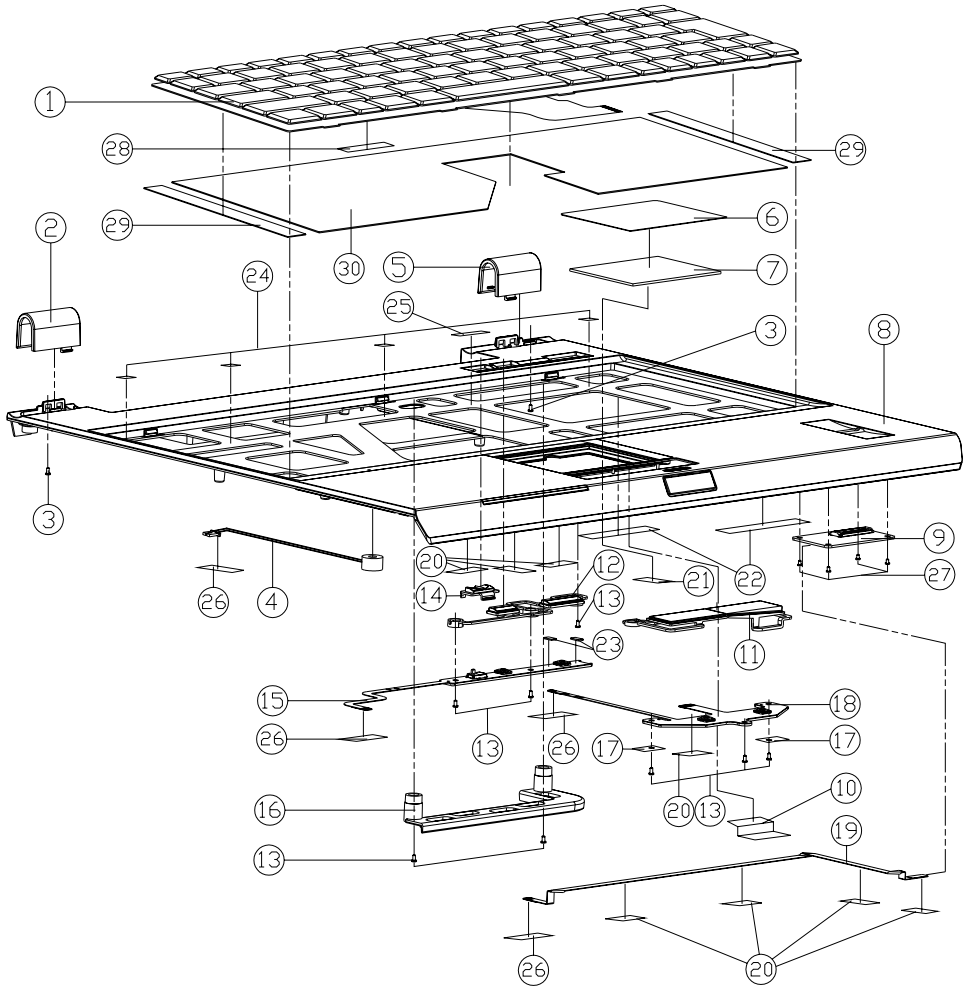
Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A - 1
**Part List Illustration
Location**

Part	Part
Top - (M620NC)	<i>page A - 3</i>
Bottom - (M620NC)	<i>page A - 4</i>
LCD - (M620NC)	<i>page A - 5</i>
DVD DUAL - (M620NC)	<i>page A - 6</i>
Combo - (M620NE)	<i>page A - 7</i>
DVD - (M620NE)	<i>page A - 8</i>
DVD/CD-RW (M620NE)	<i>page A - 9</i>
1.8" HDD Case - (M620NE)	<i>page A - 10</i>

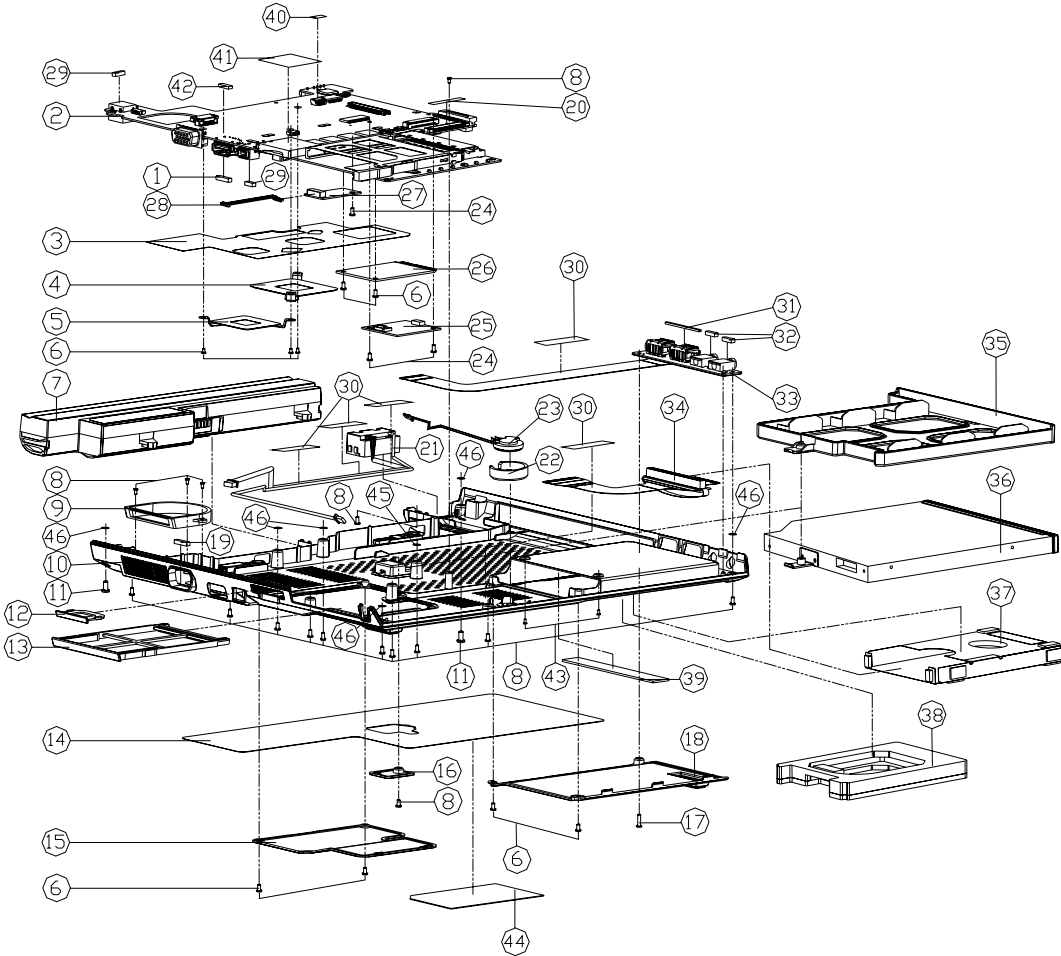
Top (M620NC)



ITEM	PART NAME	PART NO	REMARK
1	KEYBOARD (OPTION) M620NC (H4)	6-M620NC-KB	FOR M620NC
1	KEYBOARD (OPTION) M621NC (H4)	6-M621NC-KB	FOR M621NC
2	HINGE COVER,PC+ABS (L) (H4)	6-42-M62EY-022-1	FOR M620NC
2	HINGE COVER,PC+ABS (R) (H4)	6-42-M621Y-022-1	FOR M621NC
3	SCREW M2X3 KI NI ICT GY-PATCH (H4)	6-35-B1120-3RE	
4	MIC 6MMX3.5 2V-10V 22K W/CABLE (H4)	6-23-EM62E-010	
5	HINGE COVER,PC+ABS (H4)	6-42-M62EY-012-1	FOR M620NC
5	HINGE COVER,PC+ABS (H4)	6-42-M621Y-012-1	FOR M621NC
6	MYLAR FOR TOUCH PAD (H4)	6-40-M62E2-031	FOR M620NC
6	MYLAR FOR TOUCH PAD (H4)	6-40-M6212-012	FOR M621NC
7	TOUCH PAD 810602-1703 M620NE (H4)	6-49-M62E2-010	
8	TOP CASE MODULE (H4)	6-33-M62CP-100-1	FOR M620NC
8	TOP CASE MODULE (H4)	6-33-M6212-200	FOR M621NC
9	FINGERPRINT BOARD V2.0 M620NE (H4)	6-77-M62EF-002	
10	MYLAR FOR HOOK BOTTOM (H4)	6-40-M62E3-030	
11	CLICK BUTTON,GE CM6140 (H4)	6-42-M62E2-041-1	
12	POWER BUTTON,GE CM6140 (H4)	6-42-M62E2-021-1	
13	SCREW M2X3.5 KI NI ICT NY (H4)	6-35-B1120-3R5-1	
14	WLAN ON BUTTON,GE CM6140 (H4)	6-42-M62E2-052-1	
15	FPC CABLE FOR POWER IN M620NE (H4)	6-43-M62E4-012	
16	CABLE HOLD,GE CM6140 M620NE (H4)	6-42-M62E2-060-1	
17	GASKET (15X6X0.11T,HOLE=2MM) (H4)	6-47-00190-150	
18	FPC CABLE FOR CLICK M620NE (H4)	6-43-M62E2-012	
19	FPC CABLE FOR FINGERPRINT M620NE (H4)	6-43-M62EF-010-1	
20	TAPE 10X16 PX791 (H4)	6-47-W791A-010	
21	GASKET (54X10X0.15) FOR DATA CENTER COVER (H4)	6-47-00190-15F	
22	MYLAR FOR COOKBOOKS/MAP/PCB (H4)	6-40-M62EZ-010	
23	RUBBER,SILICON RUBBER POWER KEY M620NE (H4)	6-47-M62E2-020	
24	TAPE CONDUCTIVE 1.15MM FOR KEYBOARD M620NE (H4)	6-40-M62E7-010	
25	TAPE CONDUCTIVE 1.15MM FOR KEYBOARD M620NE (H4)	6-40-M62E7-020	
26	TAPE 10X16 PX791 (H4)	6-47-W791A-020	
27	SCREW M2X2.5 KI NI ICT NY (H4)	6-35-B1120-2R5	
28	TAPE 20X35X0.15 (H4)	6-40-M62E7-030	
29	GASKET 100X7X0.45 (H4)	6-47-00190-1A4	
30	MYLAR FOR K/B BOTTOM (H4)	6-40-M62E3-060	

Figure A - 1
Top (M620NC)

Bottom (M620NC)



ITEM	PART	NAME	PART	NO	REMARK
1	GASKET	UNIMATED FOR 18" HOD FOR M620NC	6-47-00190-10E		
2	MAIN BOARD	V3.A M620NC	6-77-M620C-003A		FOR M620NC
3	M/B BOTTOM	HYLAR FOR M620NC	6-40-M620C-031		
4	OPS WASTON	3030H-MYLAR M620NC	6-31-M620C-021		
5	VGA WASTON	3030H-MYLAR M620NC	6-31-M620C-031		
6	SCREW	M2X4. KI NI ICT NY	6-35-B1120-3RA		
7	BATRY	3.5 LI TAY/20H 250P AC/20000	6-87-M620C-4D7		FOR M620NC
7	BATRY	3.5 LI TAY/20H 250P AC/20000	6-87-M620C-4DK		FOR M620NC
7	BATRY	3.5 LI TAY/20H 250P AC/20000	6-87-M621S-4D7		FOR M621NC
7	BATRY	3.5 LI TAY/20H 250P AC/20000	6-87-M621S-4DK		FOR M621NC
8	SCREW	M2X4. KI NI ICT NY	6-35-C1120-4RB		
9	FAN	SV 813A 18200RPM	6-23-AM62E-011		
10	BOTTOM CASE	MODULE M620NC	6-33-M62E3-104-1		
11	SCREW	M2X4. KI NI ICT NY	6-35-B1125-6RA		
12	SD DUMMY CARTRIDGE	CM6140 M620NC	6-42-M62E3-051		
13	PCMCIA DUMMY CARTRIDGE	CM6140 M620NC	6-42-M62E3-041		
14	MYLAR FOR BOTTOM CASE	FRESH-SEALS M620NC	6-40-M62E3-010		
15	RAM COVER	MG-AL M620NC	6-33-M62E3-021		
16	ODD COVER	CM6140 M620NC	6-42-M62E3-012-1		
17	SCREW	M2X4. KI NI ICT NY	6-35-C1120-4RA		
18	HDD COVER	MODULE M620NC	6-33-M62E3-101		
19	GASKET	UNIMATED FOR 18" HOD FOR M620NC	6-47-00190-14E		
20	TAPE	MYLAR (CD) MYLAR M620NC	6-40-M55J2-010		
21	CABLE	FOR 2.5" HOD R2-45 CABLE M620NC	6-43-M62E3-021		
22	SPEAKER	RUBBER-SILICONE M620NC	6-47-M62E3-011		
23	SPEAKER	18W 8Ω/16V 81 VATT-20000-10	6-23-5M62E-010		
24	SCREW	M2X4. KI NI ICT NY	6-35-B4125-4RA		
25	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
26	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
27	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
28	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
29	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
30	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
31	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
32	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
33	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
34	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
35	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
36	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
37	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
38	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
39	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
40	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
41	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
42	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
43	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
44	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
45	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		
46	WASHER	M6X4X3.05 304L STAINLESS STEEL	6-37-02000-600		

LCD (M620NC)

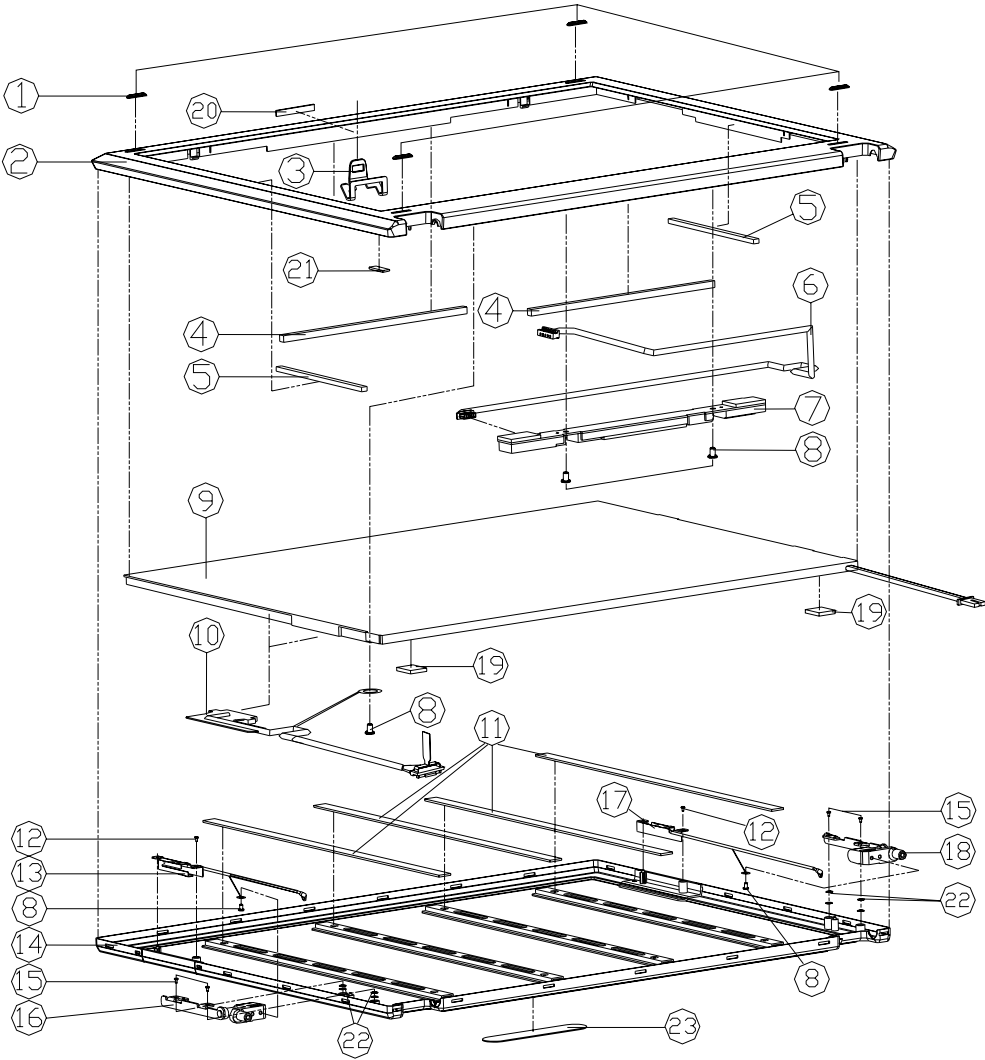


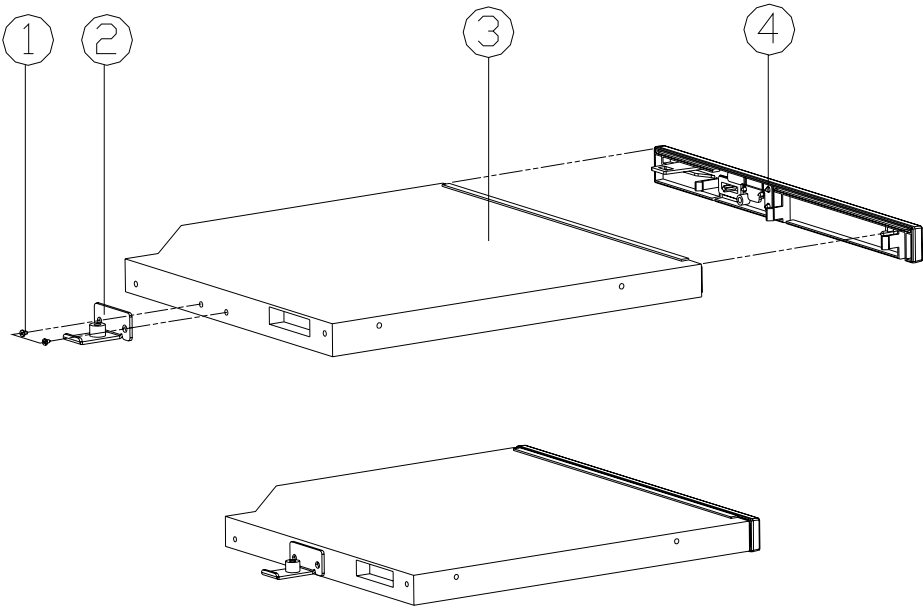
Figure A - 3
LCD (M620NC)

ITEM	PART NAME	PART NO	REMARK
1	FRONT CASE RUBBER,RUBBER (RUBBER) M620NC	6-47-M62E1-021	FOR M620NC
1	FRONT CASE RUBBER,RUBBER (RUBBER) M621NC	6-47-M6211-011	FOR M621NC
2	WIRE CABLE FOR INVERTER BOARD 6P TO M/B 7P	6-39-M62C1-011	FOR M620NC
2	WIRE CABLE FOR INVERTER BOARD 6P TO M/B 7P	6-39-M6211-111	FOR M621NC
3	LCD LATCH,SECC (PREFINISHED) M620NC	6-33-M62E1-022	FOR M620NC
3	LCD LATCH,SECC (PREFINISHED) M621NC	6-33-M6211-022	FOR M621NC
4	LCD SPONGE,MH32 (100*3*3) M620NC	6-47-M62E1-040	
5	LCD SPONGE,MH32 (65*3*2) M620NC	6-47-M62E1-050	
6	WIRE CABLE FOR INVERTER BOARD 6P TO M/B 7P	6-43-M62ER-011	
7	INVERTER MODULE FOR M620NC (MPT)	6-76-M62ER-011	
8	SCREW M4X3.1 N1 ICT NY (BZ) (ZINC) (ZINC)	6-35-C1120-3RA	
9	LCD 12.1" TOSHIBA LT02HEDPS P-SI 55MM	6-509-F2255-100	
10	COAXIAL CABLE FOR (TOSHIBA LT02HEDPS) 12"	6-43-M62E1-011	
11	BACK CASE SPONGE(180*6*1) M620NC	6-47-M62E1-030	
12	SCREW K1 M4.6X3.1 D=4 T=0.4 BZ ICT	6-35-B2116-3R0	
13	ANTENNA BALETTOOTH DUAL BAND PIFA GARY L-43	6-23-7M62E-011	
14	WIRE CABLE FOR INVERTER BOARD 6P TO M/B 7P	6-33-M62E1-202-1	FOR M620NC
14	WIRE CABLE FOR INVERTER BOARD 6P TO M/B 7P	6-33-M6211-202-1	FOR M621NC
15	M4X3.1X3.1-40B SCREW M4X4.1 BZ ICT NY (ZINC)	6-35-C6120-4RA	
16	LCD HINGE, 符合金 (CL) M620NC	6-33-M62EY-022	FOR M620NC
16	LCD HINGE, 符合金 (CL) M621NC	6-33-M621Y-022	FOR M621NC
17	ANTENNA WIRELESS DUAL BAND PIFA BLACK L-55	6-23-7M62E-021	
18	LCD HINGE, 符合金 (CR) M620NC	6-33-M62EY-012	FOR M620NC
18	LCD HINGE, 符合金 (CR) M621NC	6-33-M621Y-012	FOR M621NC
19	GASKET 10MM 55MM	6-47-00190-11A	
20	MILAR FOR LCD LATCHES (M620NC)	6-40-M62E1-020	
21	MAGNET BRACKET, 符合金 M550G	6-33-M55G1-070	
22	MAGNET BRACKET, 符合金 M550G	6-37-02000-606	
23	NEW STYLNOTE 中注 LOGO 用 M620NC	6-45-M62C1-020	

Part Lists

DVD (M620NE)

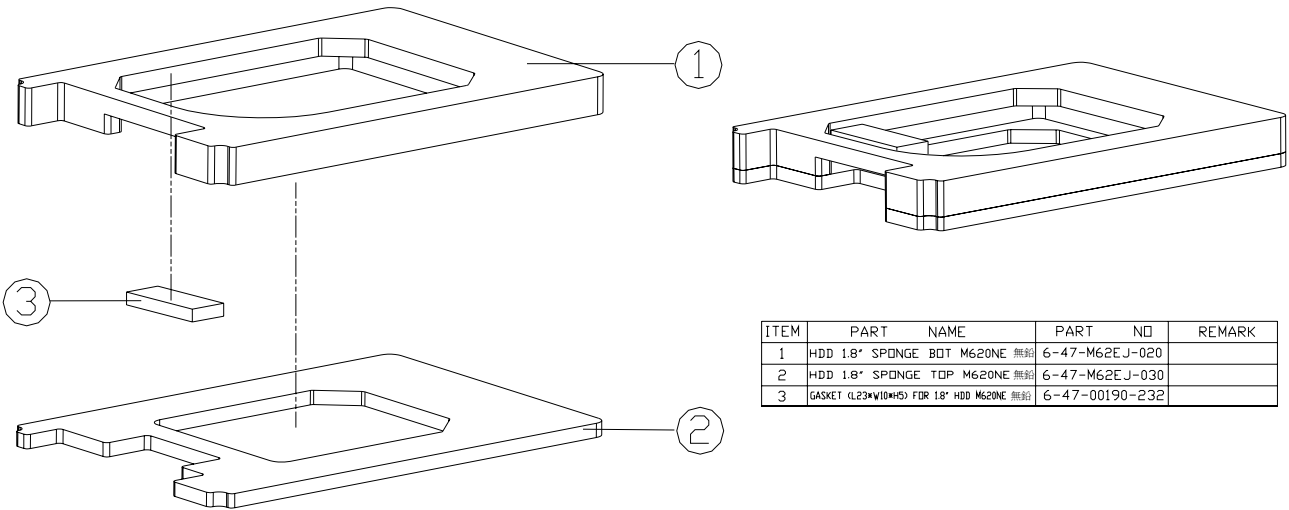
Figure A - 6
DVD (M620NE)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2X3.1 IN ICT NY (PHILIPS, TORX, TORX0.8MM, 1.5MM, 1.5MM, 1.5MM, 1.5MM, 1.5MM)	6-35-C1120-3RA	
2	CD-ROM LOCK BRACKET, SECC M620NE 無鉛	6-33-M62EZ-011	
3	DVD 5 1/4" 8X 128X129X9.5MM (VxDxH) UJD4775	6-85-7088X-P00	
4	DVD BEZEL MODULE M620NE 無鉛	6-42-M62EV-101-1	

1.8"HDD Case (M620NE/NC)

Figure A - 8
1.8" HDD Case
(M620NE/NC)



Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *M62N* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>HDD/ODD, USB2.0 * 1 - Page B - 19</i>
<i>Yonah 1/2 - Page B - 3</i>	<i>Clock Generator, Fan, TP - Page B - 20</i>
<i>Yonah 2/2 - Page B - 4</i>	<i>Marvell 88E8038 - Page B - 21</i>
<i>945GMS 1/5 HOST - Page B - 5</i>	<i>PCI7412, 1394 - Page B - 22</i>
<i>945GMS 2/5 - Page B - 6</i>	<i>PCM Socket, 3 In 1 Socket - Page B - 23</i>
<i>945GMS 3/5 DDR - Page B - 7</i>	<i>H8/21111 - Page B - 24</i>
<i>945GMS 4/5 - Page B - 8</i>	<i>ALC260, PC-BEEP - Page B - 25</i>
<i>945GMS 5/5 - Page B - 9</i>	<i>AMP, TPM, MINI PCIE - Page B - 26</i>
<i>DDRII SO-DIMM - Page B - 10</i>	<i>Audio B'd, FP, MDC, Vista - Page B - 27</i>
<i>Memory Down-1 - Page B - 11</i>	<i>LED, HALL IC, SUS PWR - Page B - 28</i>
<i>Memory Down-2 - Page B - 12</i>	<i>+VDD3, +VDD5, +3V, +5V - Page B - 29</i>
<i>DDR Series Termination - Page B - 13</i>	<i>+VCORE - Page B - 30</i>
<i>CRT, Panel, Inverter - Page B - 14</i>	<i>Memory Power +1.8V, +0.9VS - Page B - 31</i>
<i>ICH7-M 1/4, BT - Page B - 15</i>	<i>VCCP +1.5VS, +1.05VS - Page B - 32</i>
<i>ICH7-M 2/4, PCI, USB, SPI - Page B - 16</i>	<i>AC-In, Charger - Page B - 33</i>
<i>ICH7-M 3/4, FWH - Page B - 17</i>	<i>Fingerprint B'd - Page B - 34</i>
<i>ICH7-M 4/4 - Page B - 18</i>	<i>Lid SW B'd - Page B - 35</i>

Table B - 1
**Schematic
Diagrams**

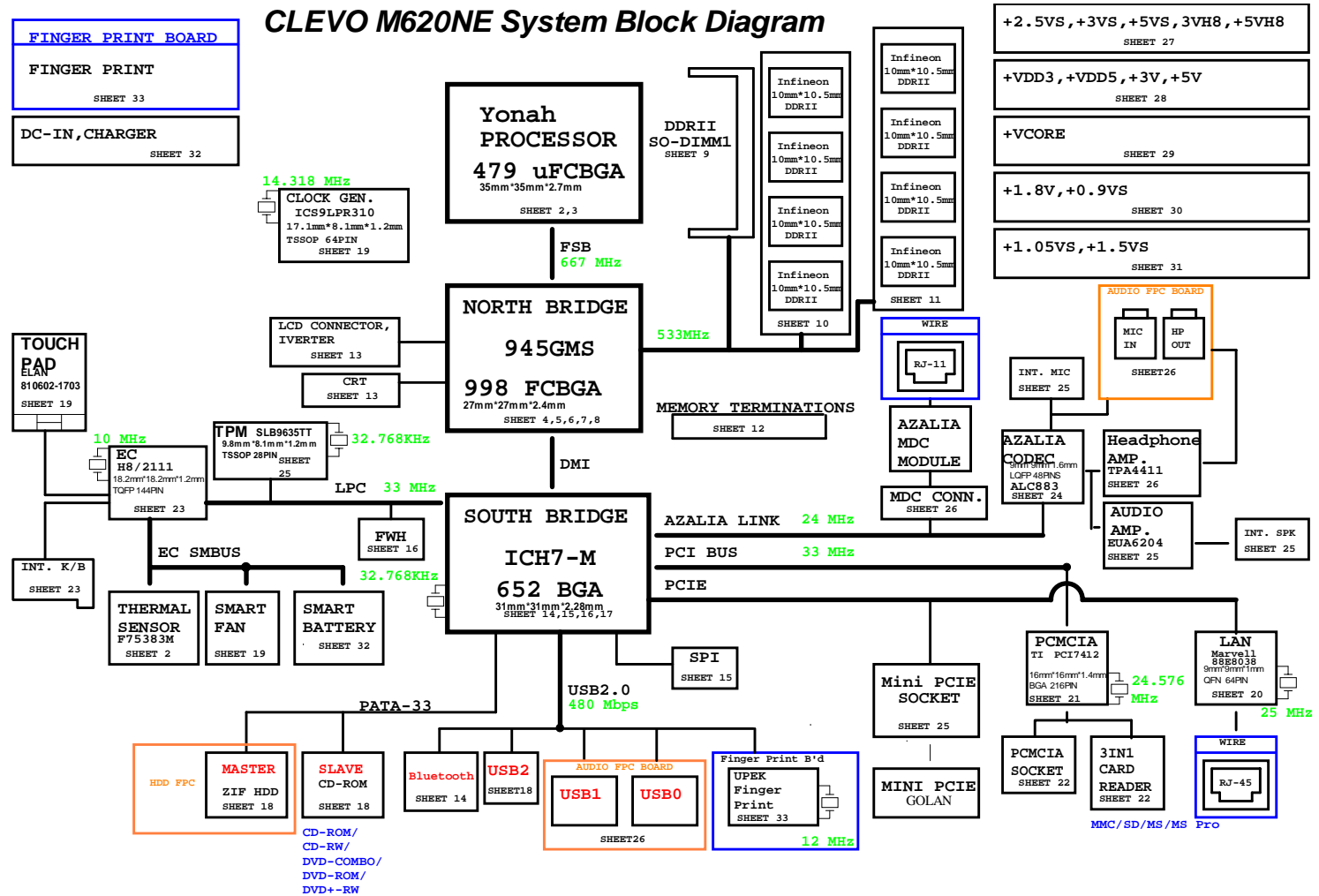


Version Note

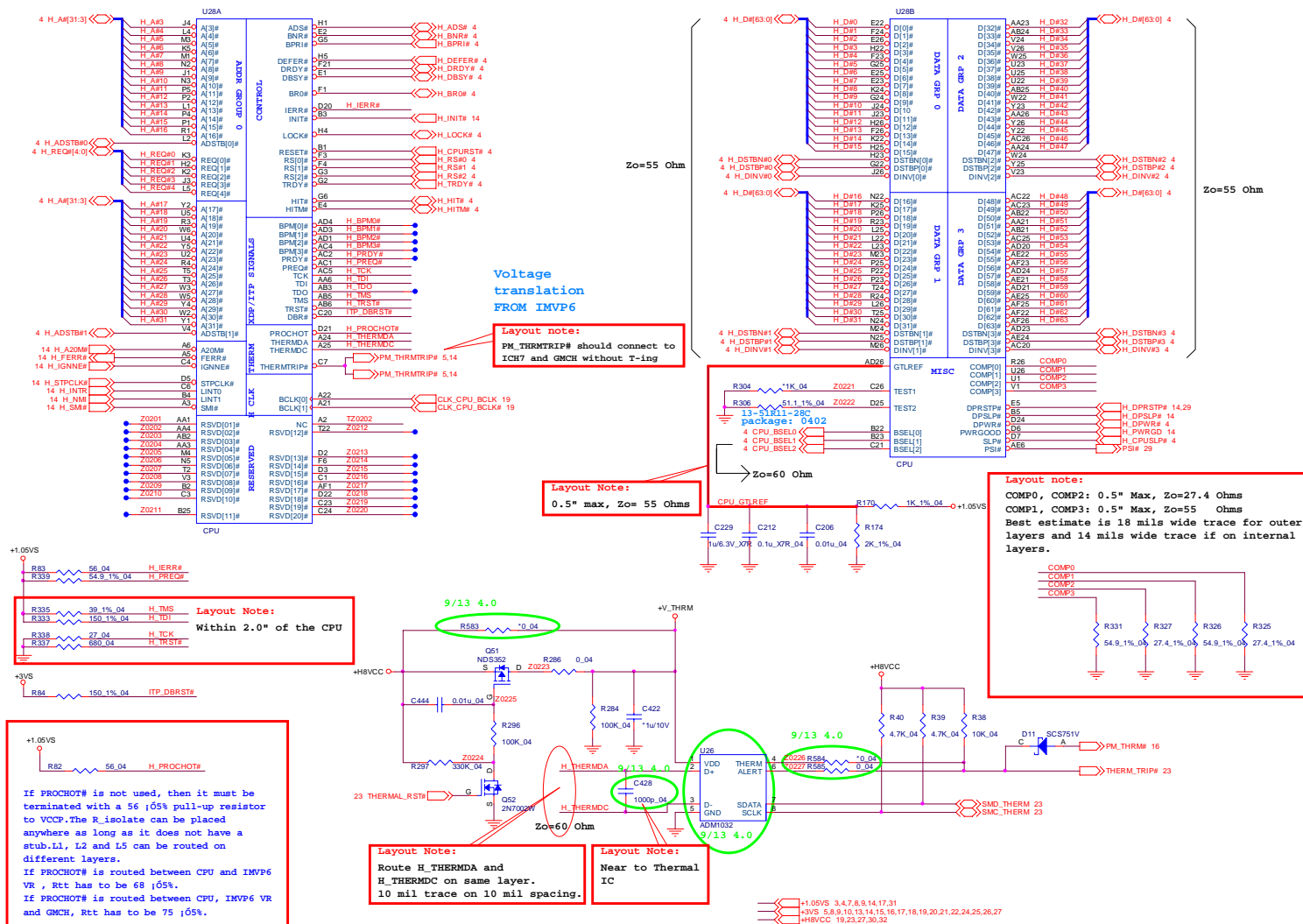
The schematic diagrams in this chapter are based upon version **6-7P-M62E3-001**. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 45
SYSTEM BLOCK
DIAGRAM

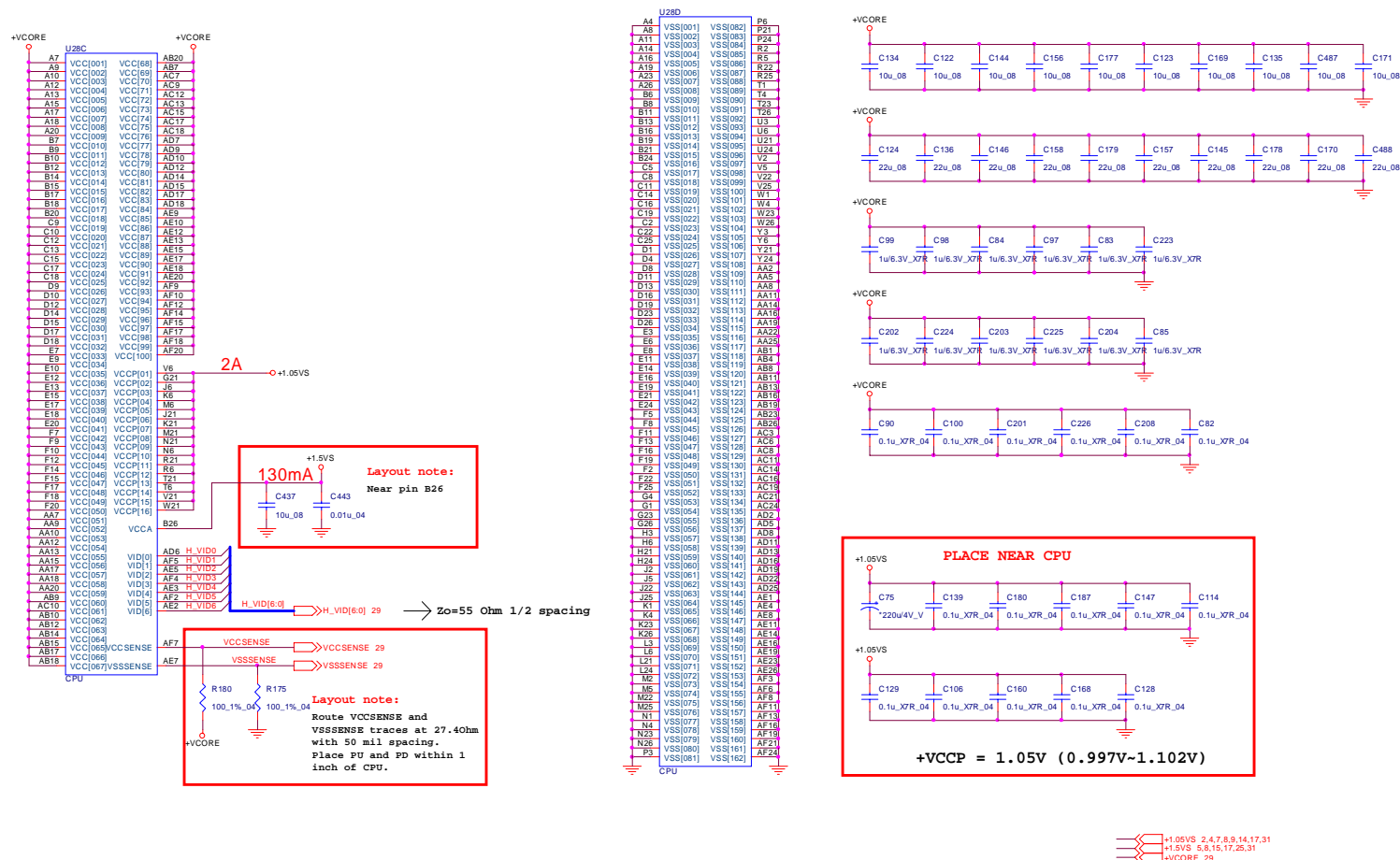


Yonah 1/2

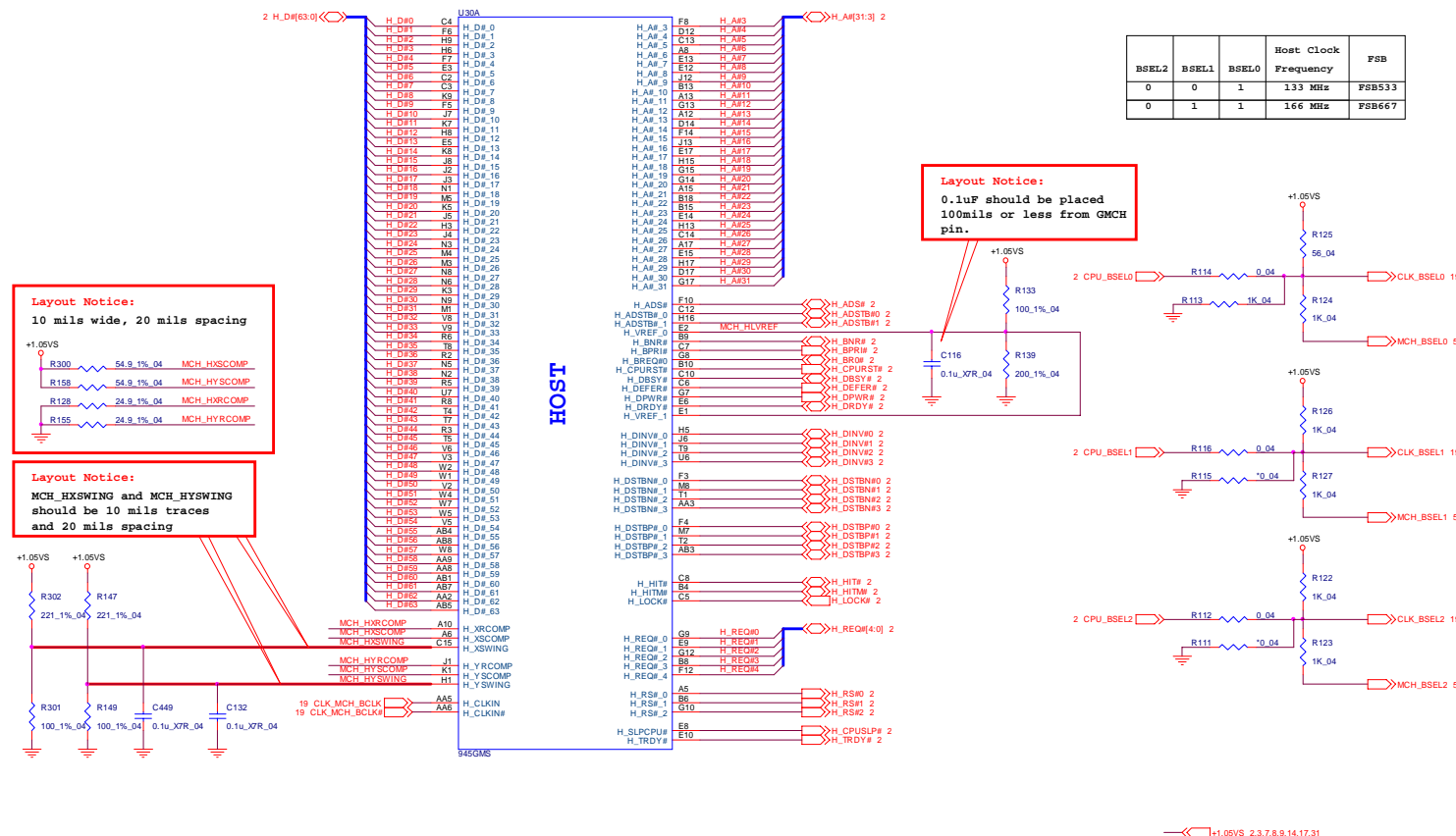
Sheet 2 of 34
Yonah 1/2

Yonah 2/2

Sheet 3 of 34
Yonah 2/2



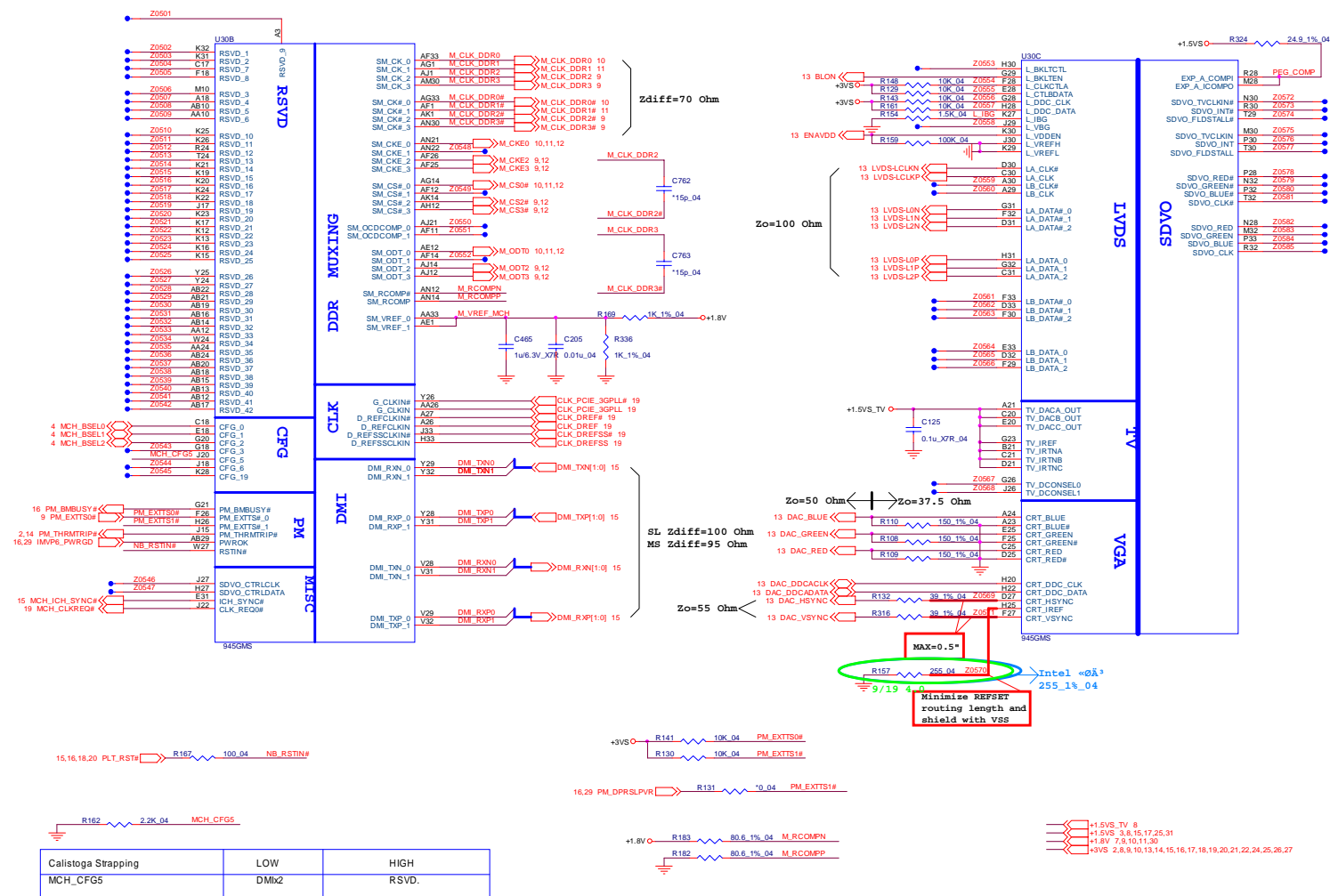
945GMS 1/5 HOST



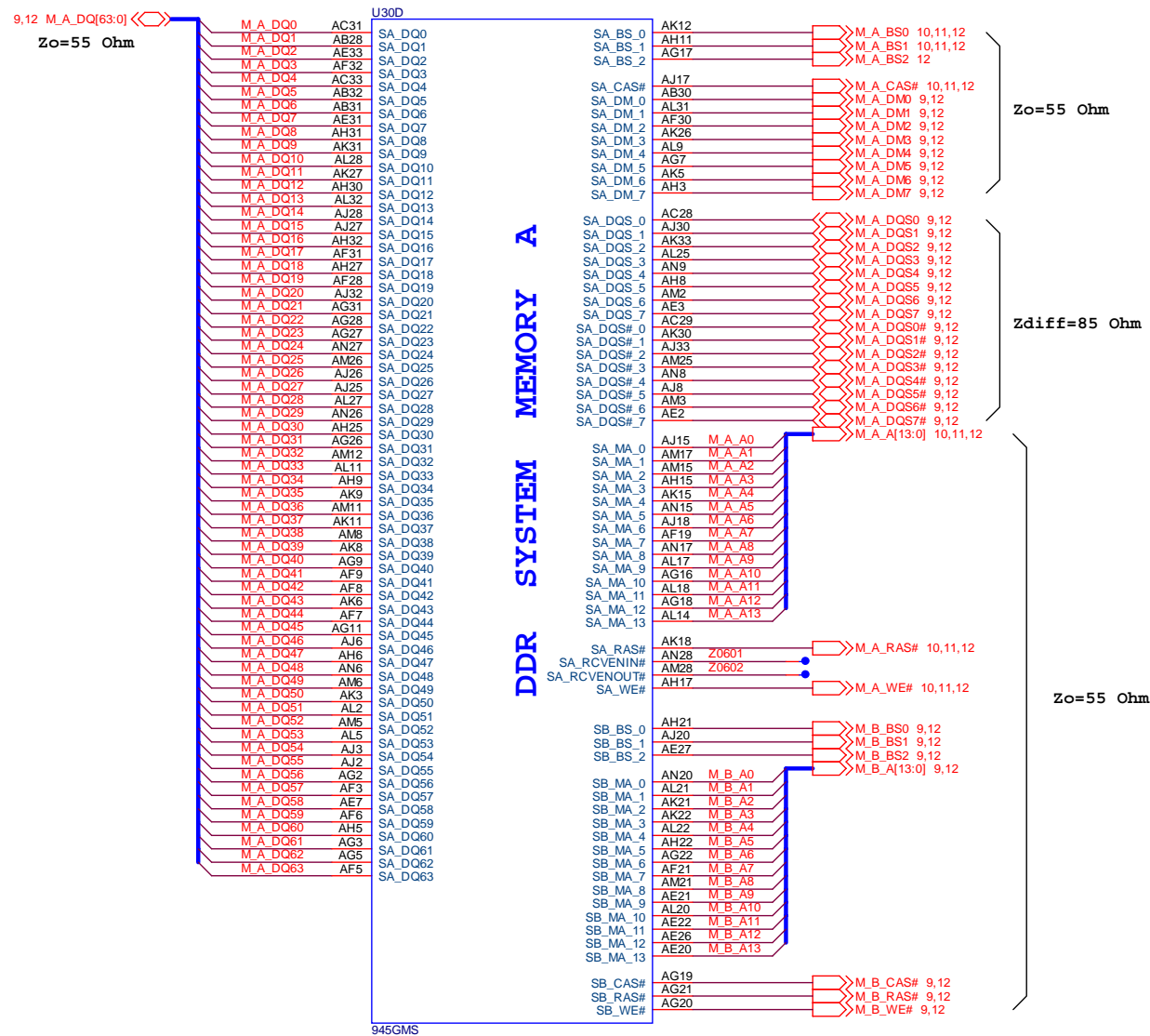
Sheet 4 of 34
945GMS 1/5 HOST

B. Schematic Diagrams

Sheet 5 of 34
945GMS 2/5



945GMS 3/5 DDR

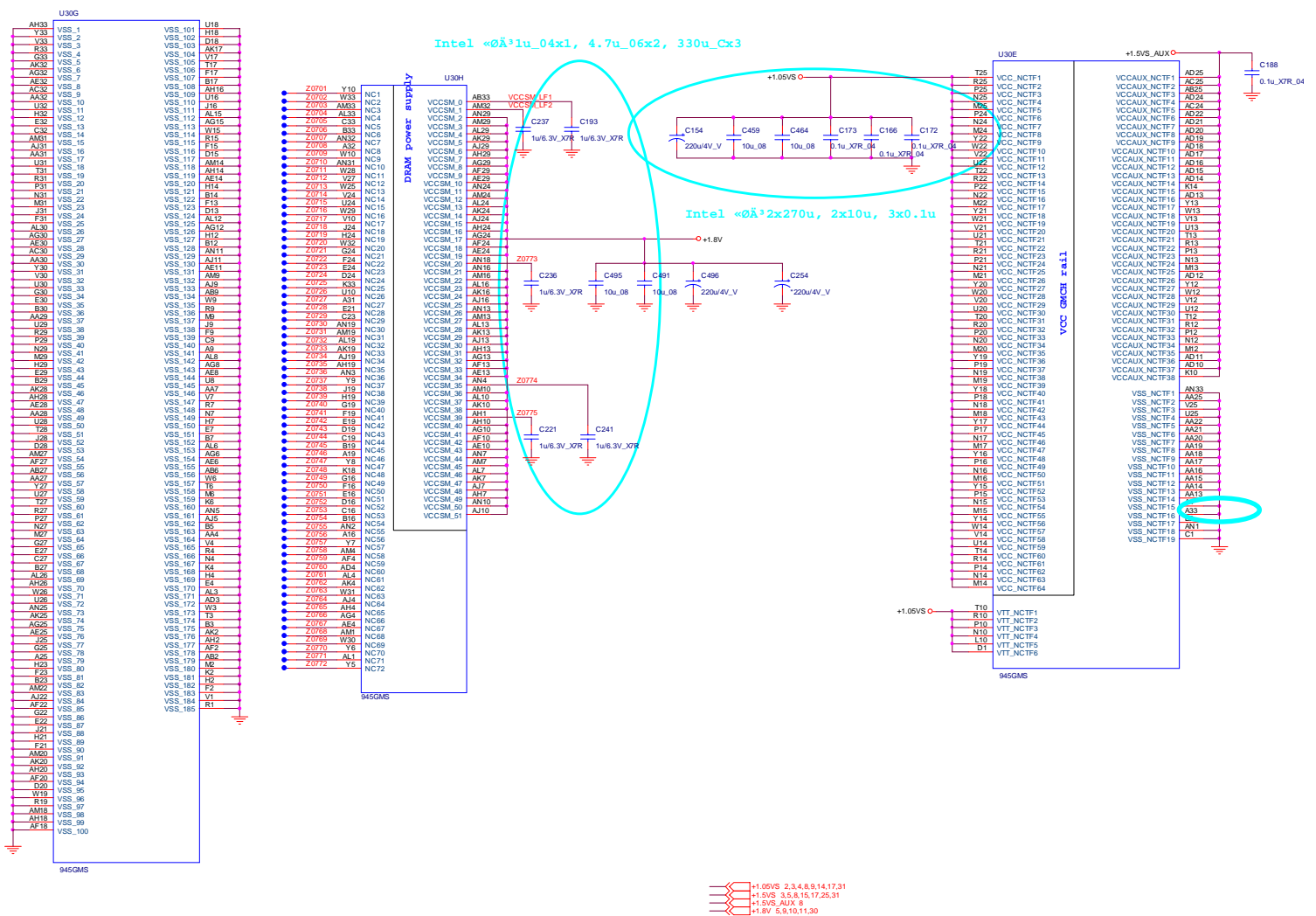


Sheet 6 of 34
945GMS 3/5 DDR

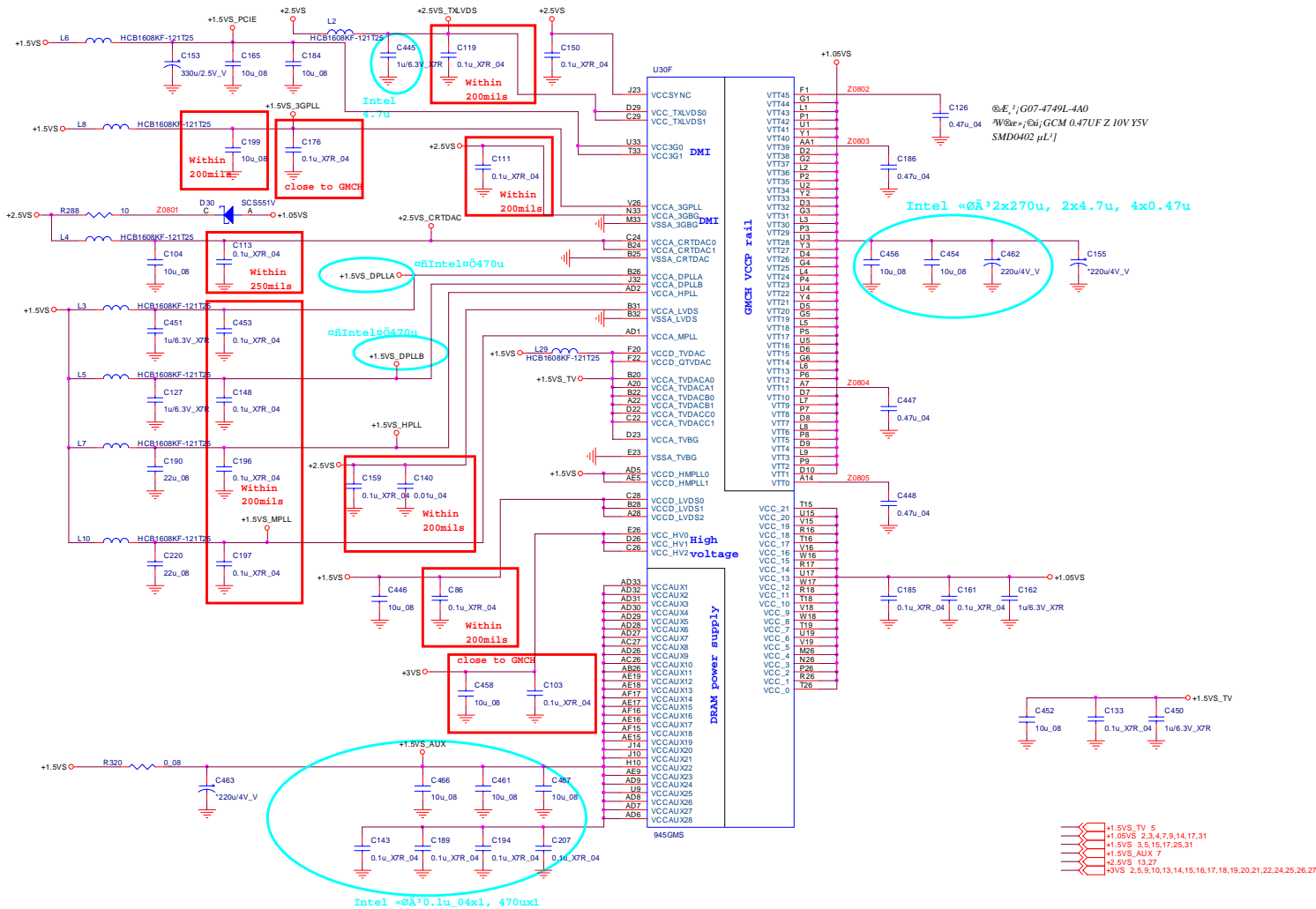
Schematic Diagrams

945GMS 4/5

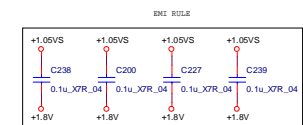
Sheet 7 of 34
945GMS 4/5



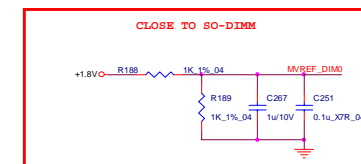
945GMS 5/5

Sheet 8 of 34
945GMS 5/5

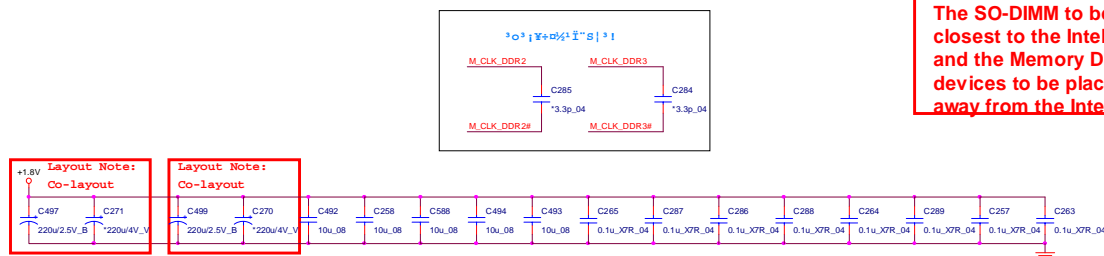
SO-DIMM



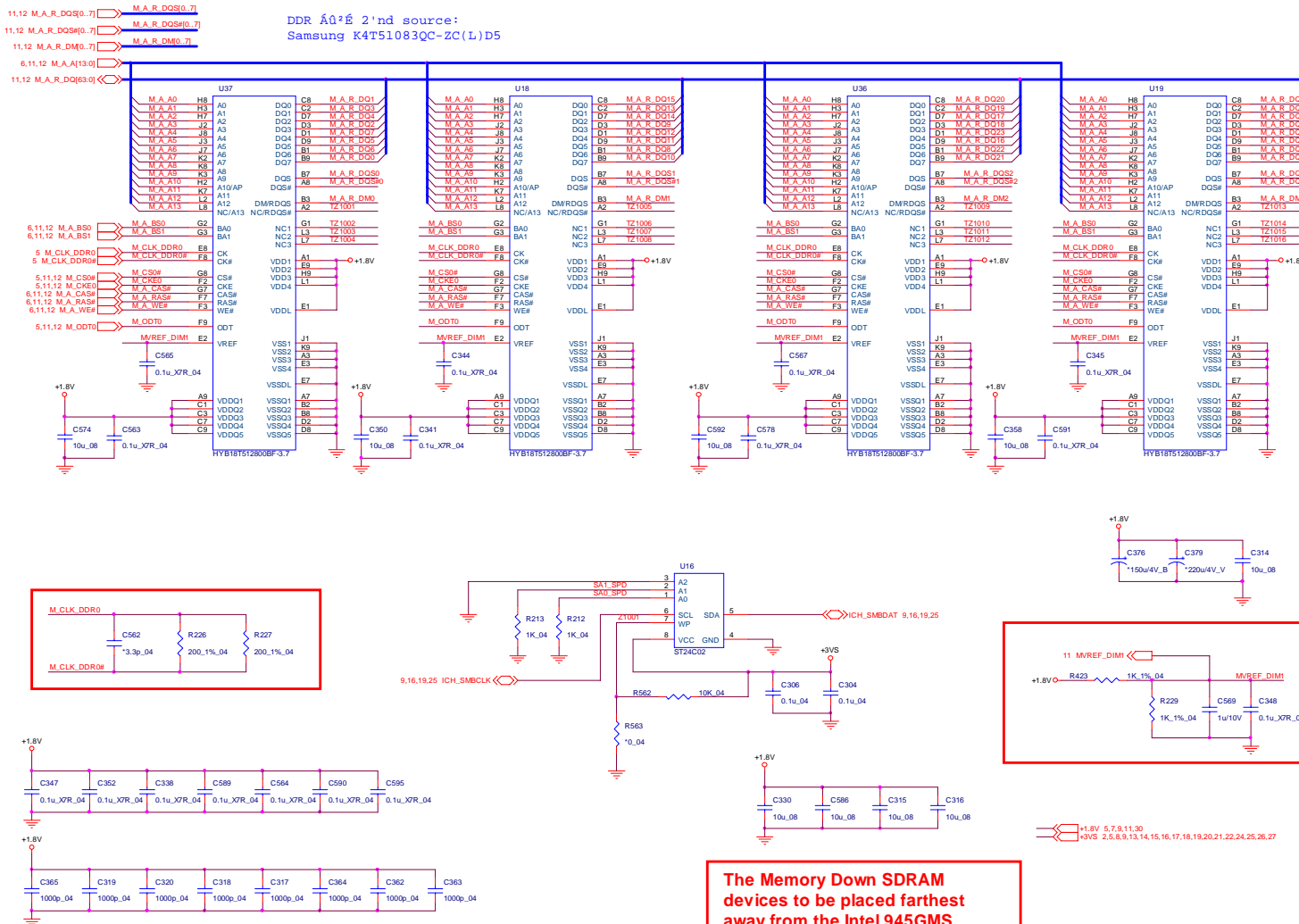
—<<+1.05VS 2,3,4,7,8,14,17,31



The SO-DIMM to be placed closest to the Intel 945GMS and the Memory Down SDRAM devices to be placed farthest away from the Intel 945GMS.



Memory Down-1



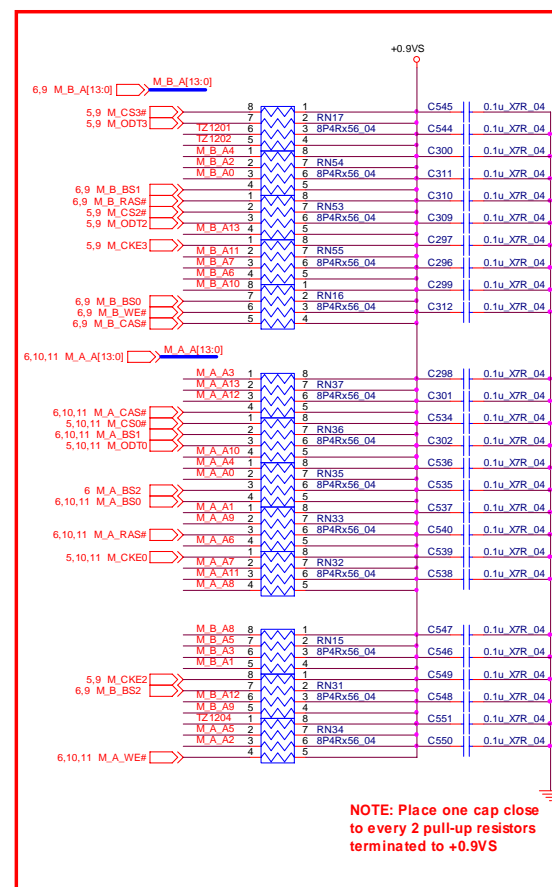
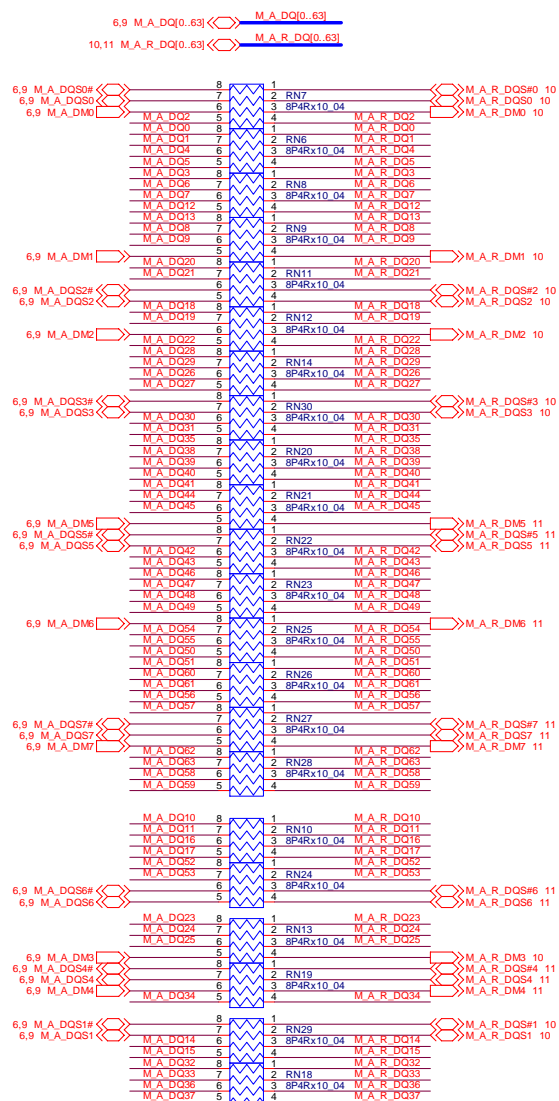
Sheet 10 of 34
 Memory Down-1

B.Schematic Diagrams

Sheet 11 of 34
Memory Down-2



DDR Series Termination

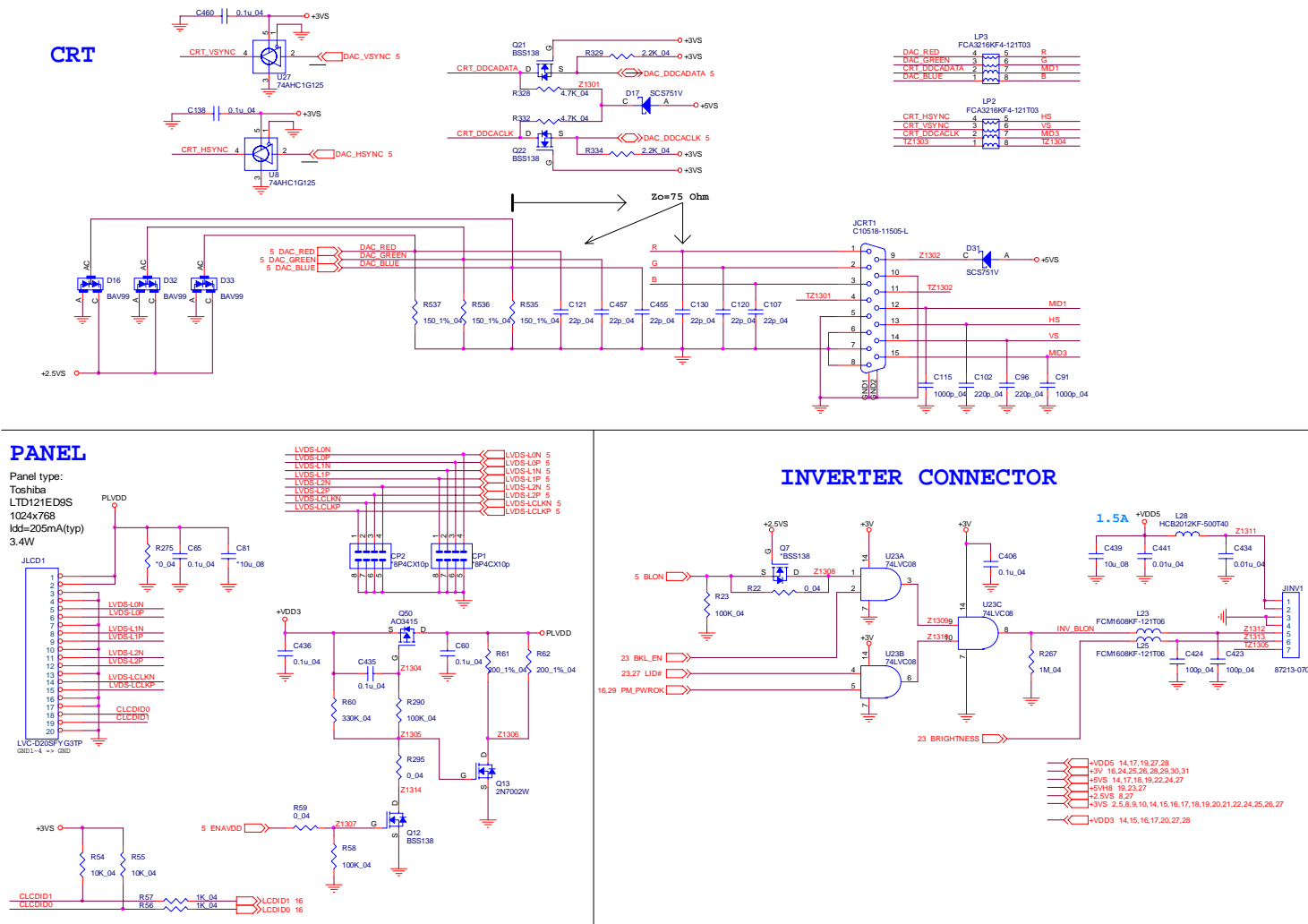


Sheet 12 of 34
DDR Series
Termination

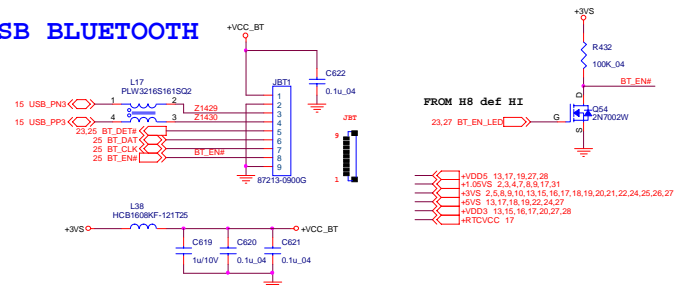
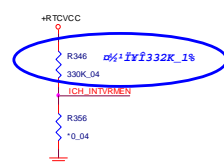
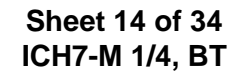
Schematic Diagrams

CRT, Panel, Inverter

Sheet 13 of 34
CRT, Panel,
Inverter

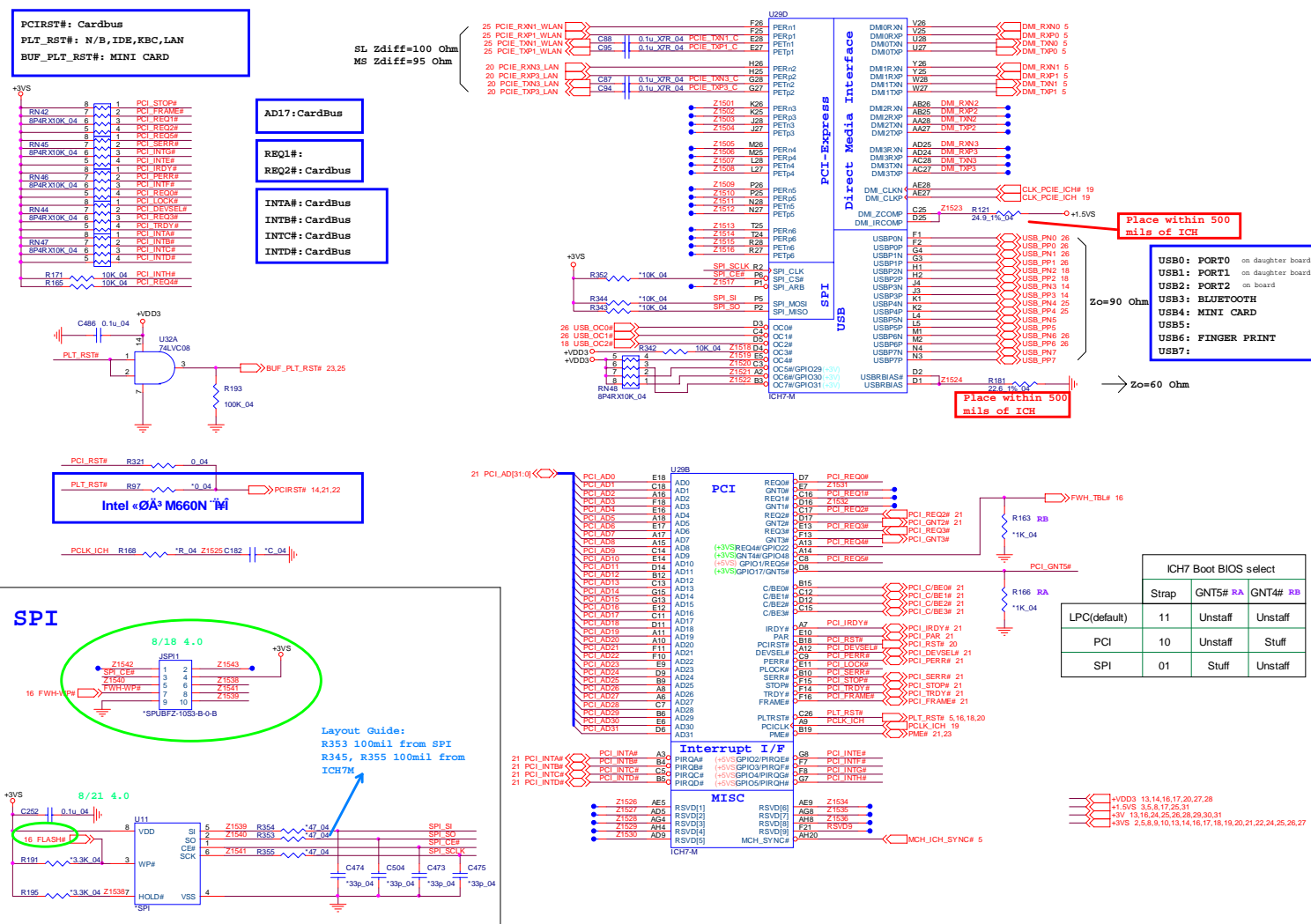


ICH7-M 1/4, BT B - 15

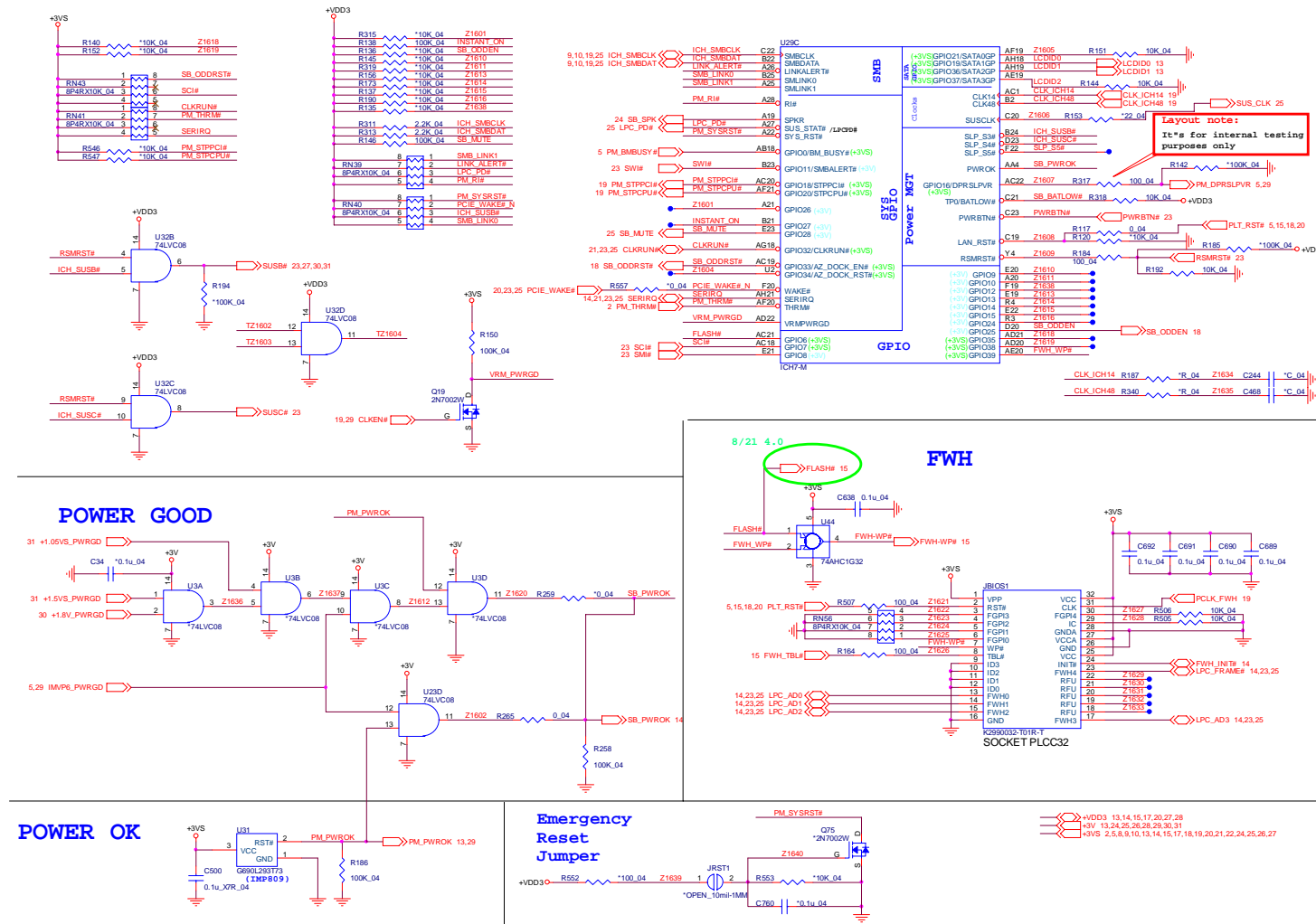


B. Schematic Diagrams

Sheet 15 of 34
ICH7-M 2/4, PCI,
USB, SPI



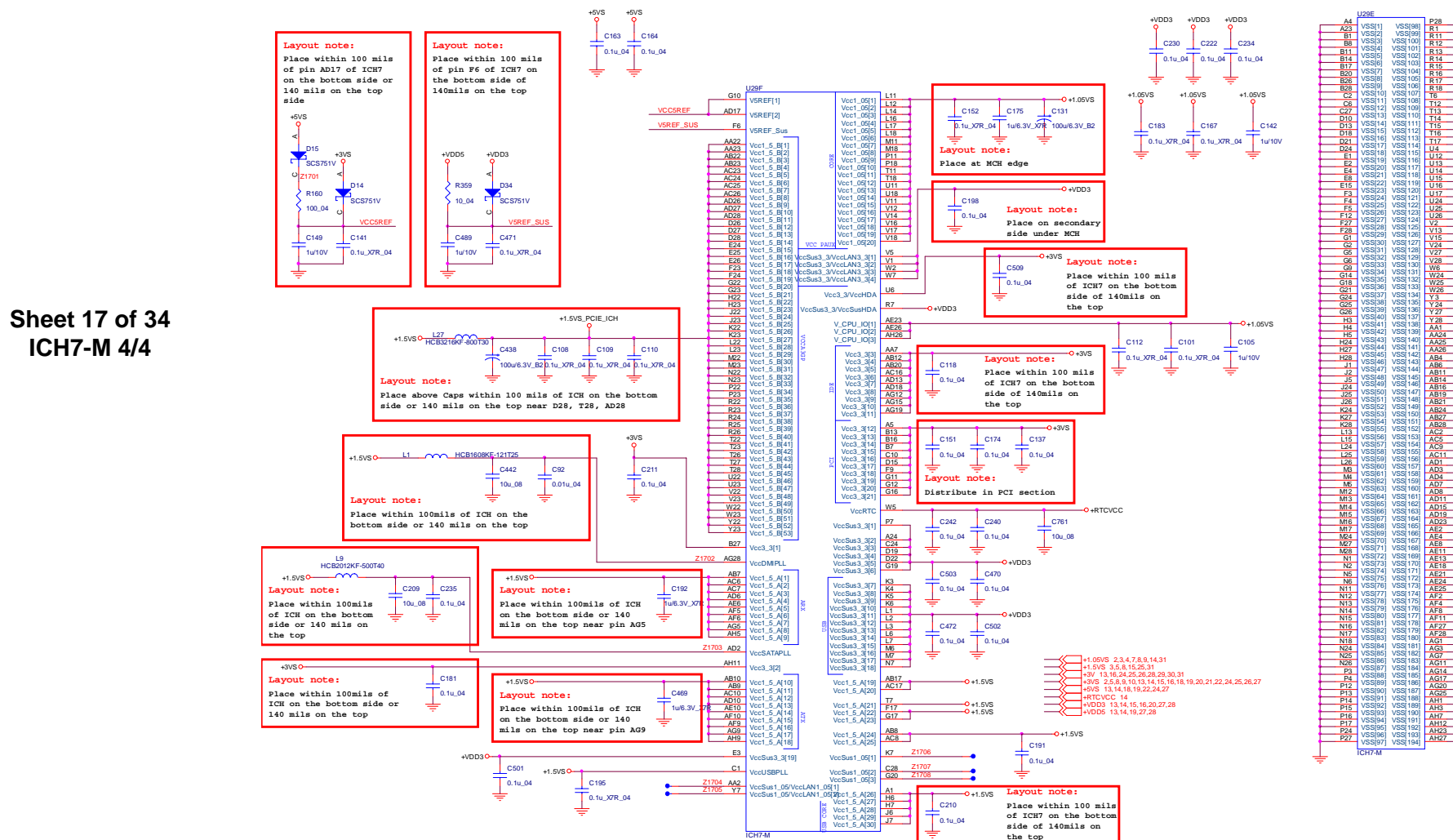
ICH7-M 3/4, FWH



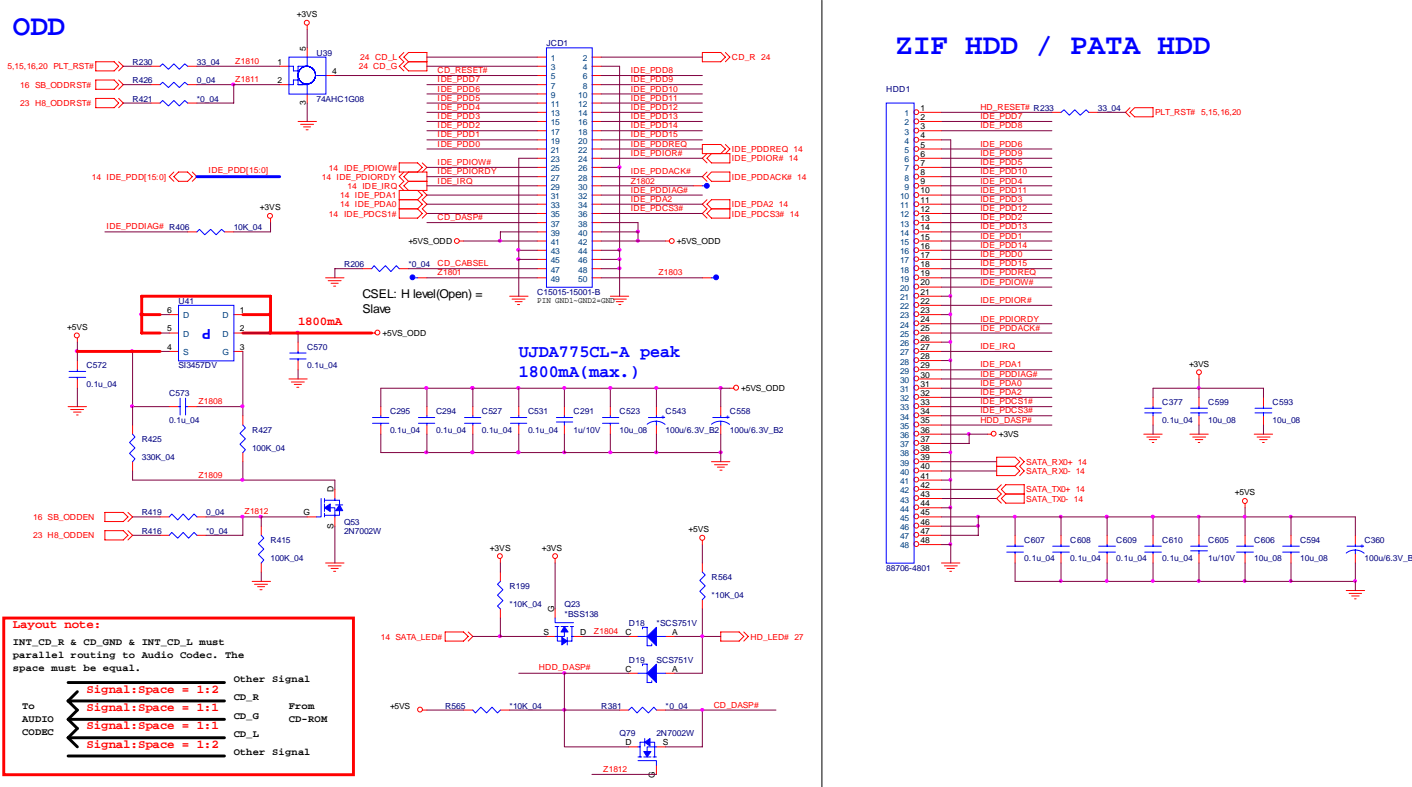
Sheet 16 of 34
ICH7-M 3/4. FWH

B.Schematic Diagrams

B - 18 ICH7-M 4/4



HDD/ODD, USB2.0 * 1



Clock Generator, Fan, TP

CLOCK GENERATOR

PLACE CRYSTAL WITHIN 500 MILS OF CK410M

+3V5

L30 HCB1608KF-121T25

C511 10u.08 1u/10V

Z1901

XTAL_IN XTAL_OUT 10mil

-np1*o! Zo=55 Ohm

21 CLK_PCM#8 <-> CLK_PCM#8 R376 33.04 FSLA 12

4 CLK_ICH#8 <-> CLK_ICH#8 R377 33.04 FSLA 12

16 CLK_BSEL1 <-> R378 2.2K 04 FSLB 60

4 CLK_BSEL1 <-> R348 2.2K 04 FSLB 60

4 CLK_BSEL2 <-> R377 2.2K 04 FSLC 61

16 CLK_ICH#14 <-> R178 33.04 FSLC 61

16 PM_STOP#J <-> CPU_STOP# R197 33.04 Z1904 5

16 PM_STOP#D <-> PM_STOP# D63

23 PCLK_H# <-> PCLK_H# R197 33.04 Z1904 5

25 PCLK_TPM <-> PCLK_TPM R358 33.04 Z1903 4

16 PCLK_FWK# <-> PCLK_PWH R196 33.04 Z1902 3

21 PCLK_PCM <-> PCLK_PCM R349 33.04 Z1905 64

+3V5 <-> R367 *10K 04 Z1906 9

15 PCCLK_I# <-> PCCLK_I# R198 33.04 Z1907 8

9,10,16,25 ICH_SMBCLK <-> SCL K54

9,10,16,25 ICH_SMBDATA <-> SDA K55

16,29 CLKEN# <-> VTT_PVRGDWPD K56

INSTALLED: Differential clock level is higher

Z1908 R34 33K 1% 04

Z1909

C280 10u.08 1u/10V

C253 1u/10V

C510 1u/10V

C268 0.1u.04

C507 0.1u.04

C233 0.1u.04

C232 0.1u.04

U10

CPUCLK1 <-> Z1910 1 48 RN2 CLK MCH BCLK <-> CLK MCH BCLK 4

CPUCLK1# <-> Z1911 2 48 RN2 CLK MCH BCLK# <-> CLK MCH BCLK# 4

CPUCLOK <-> Z1912 1 50 RN1 CLK CPU BCLK <-> CLK CPU BCLK 2

CPUCLOK# <-> Z1913 2 50 RN1 CLK CPU BCLK# <-> CLK CPU BCLK# 2

PCIEIEN <-> Z1914 44 Z1915

PCIEIOEN <-> Z1916 43 Z1917

PCIEIEN <-> Z1918 1 4 RN3 CLK_PCIE_ICH <-> CLK_PCIE_ICH 15

PCIEIOEN <-> Z1919 2 4 RN3 CLK_PCIE_ICH# <-> CLK_PCIE_ICH# 15

PCIEISF <-> Z1920 36 Z1921

PCIEISF <-> Z1922 36 Z1923

SATACLK <-> Z1924 3 2 RN52 CLK SATA <-> CLK SATA 14

SATACLK# <-> Z1925 4 1 4PRXR22 04 CLK SATA# <-> CLK SATA# 14

PCEICLQ_2X <-> Z1926 4 1 RN49 CLK_PCIE_MN1 <-> CLK_PCIE_MN1 25

PCEICLQ_2X <-> Z1927 3 2 4PRXR22 04 CLK_PCIE_MN1 <-> CLK_PCIE_MN1 25

PCEICLQ_2X <-> Z1928 4 1 RN50 CLK_PCIE_LAN <-> CLK_PCIE_LAN 20

PCEICLQ_2X <-> Z1929 3 2 4PRXR22 04 CLK_PCIE_LAN <-> CLK_PCIE_LAN 20

PCEICLQ_2X <-> Z1930 4 1 RN51 CLK_PCIE_3GPLL <-> CLK_PCIE_3GPLL 5

PCEICLQ_2X <-> Z1931 3 2 4PRXR22 04 CLK_PCIE_3GPLL# <-> CLK_PCIE_3GPLL# 5

LDCCLK/PCIEIO <-> Z1933 4 1 RN5 CLK_DREFSS <-> CLK_DREFSS #5

LDCCLK#/PCIEIO <-> Z1934 3 2 4PRXR22 04 CLK_DREFSS <-> CLK_DREFSS #5

VTT_PVRGDWPD <-> Z1936 4 1 RN4 CLK_DREF <-> CLK_DREF #5

VTT_PVRGDWPD <-> Z1937 3 2 4PRXR22 04 CLK_DREF# <-> CLK_DREF# 5

FSLC	FSEL1	FSEL0	Host Clock
BSEL2	BSEL1	BSEL0	Frequency
1	0	1	100 MHz
0	0	1	133 MHz

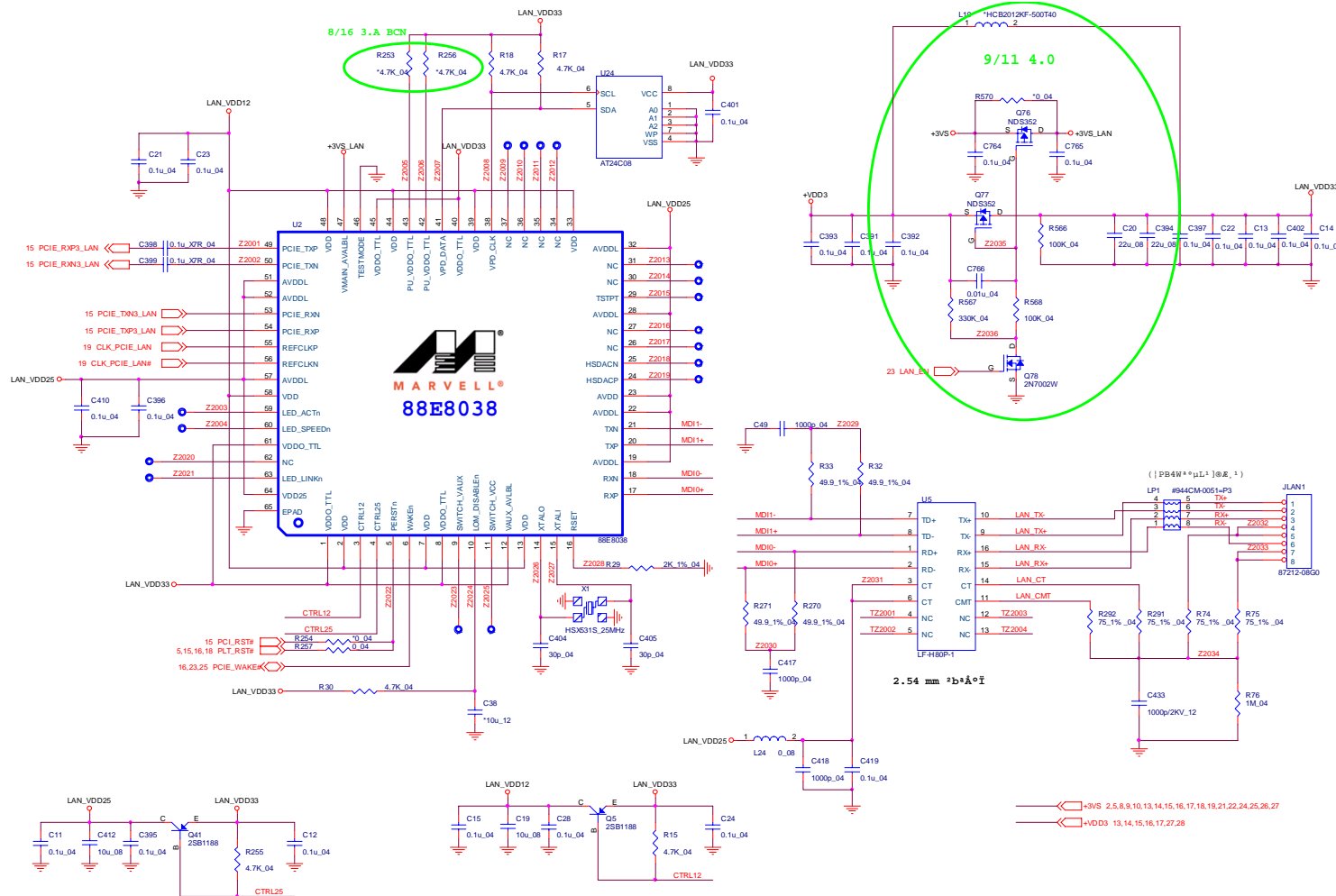
CLK_MCH_BCLK	C216	*10p_04
CLK_MCH_BCLK#	C217	*10p_04
CLK_CPU_BCLK	C214	*10p_04
CLK_CPU_BCLK#	C215	*10p_04
CLK_PCIE_ICH	C218	*10p_04
CLK_PCIE_ICH#	C219	*10p_04
CLK_SATA	C505	*10p_04
CLK_SATA#	C506	*10p_04
CLK_PCIE_MINI	C481	*10p_04
CLK_PCIE_MINI#	C480	*10p_04
CLK_DREFSS	C282	*10p_04
CLK_DREFSS#	C283	*10p_04
CLK_DREF	C280	*10p_04
CLK_DREF#	C281	*10p_04
CLK_PCIE_3GPLL	C485	*10p_04
CLK_PCIE_3GPLL#	C484	*10p_04
CLK_PCM48	C516	*10p_04
CLK_ICH48	C517	*10p_04
PCLK_H8	C278	*10p_04
PCLK_ICH	C279	*10p_04
PCLK_PCM	C508	*10p_04
CLK_ICH14	C213	*10p_04
PCLK_FWH	C277	*10p_04
CLK_PCIE_LAN	C483	*10p_04
CLK_PCIE_LAN#	C482	*10p_04

Place termination close to CK410M

FAN CONTROL

The schematic shows a microcontroller (U7A GM55) with pins 1, 2, and 3 connected to a fan control circuit. Pin 1 is connected to a MOSFET (Q17) gate through a resistor (R63, 10K_04). Pin 2 is connected to a MOSFET (Q17) drain through a resistor (R64, 4.99K_1%_04). Pin 3 is connected to a MOSFET (Q17) source through a resistor (R93, 4.7K_04). The MOSFET (Q17) is connected to a fan motor (FAN) through a relay (JFAN1). The fan motor is connected to a power supply (+HVCC) through a resistor (R93, 4.7K_04). The circuit also includes a capacitor (C2, 100uF_3V_B2) and an inductor (L44, HC82012KF-500T40). Power supply rails +VDD5 and +HVCC are indicated.

B - 20 Clock Generator, Fan, TP

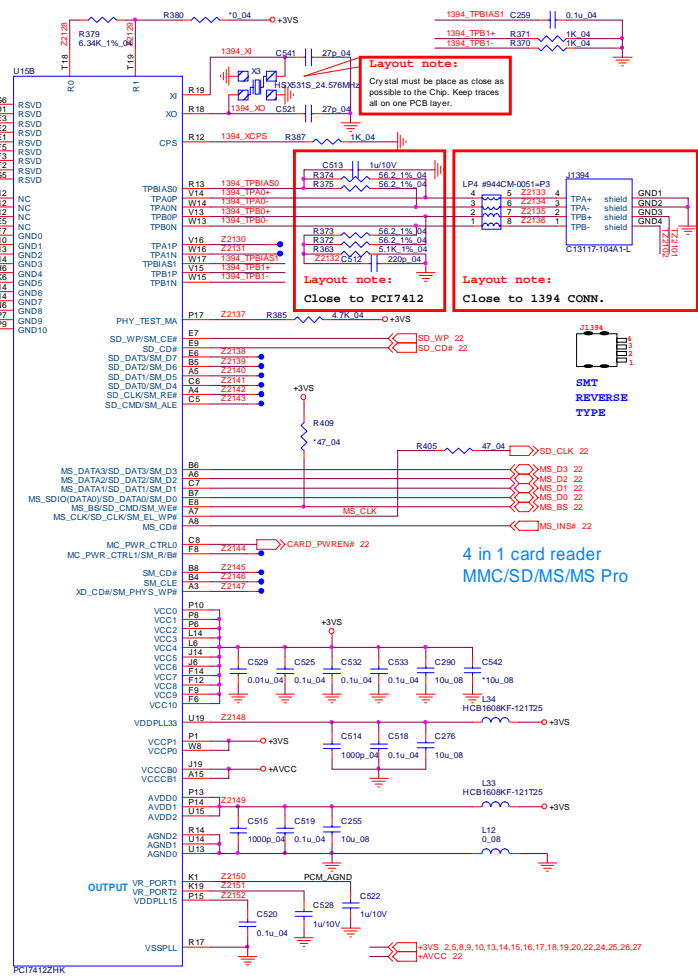
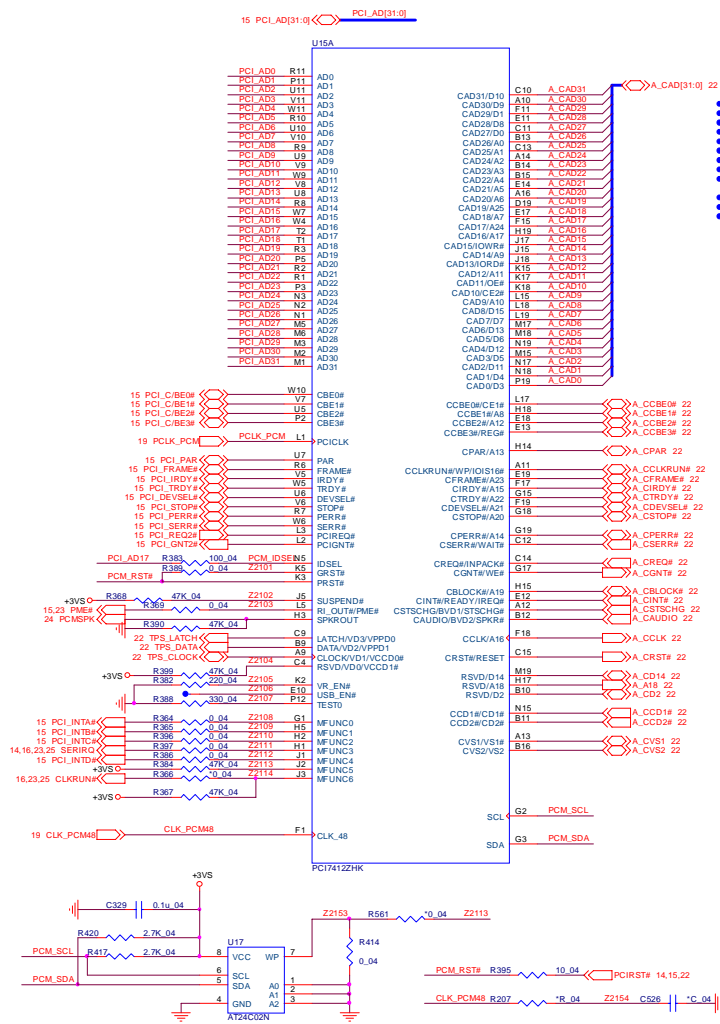


Sheet 20 of 34
Marvell 88E8038

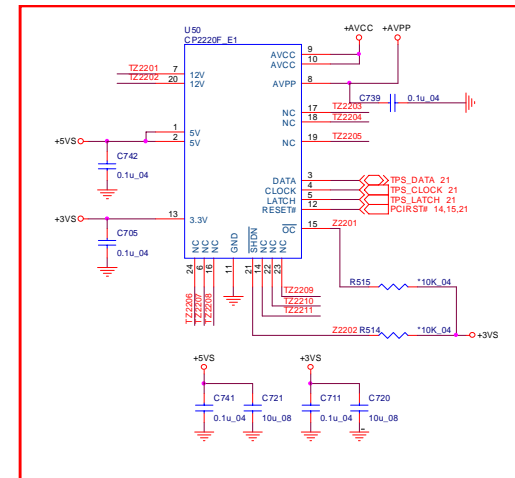
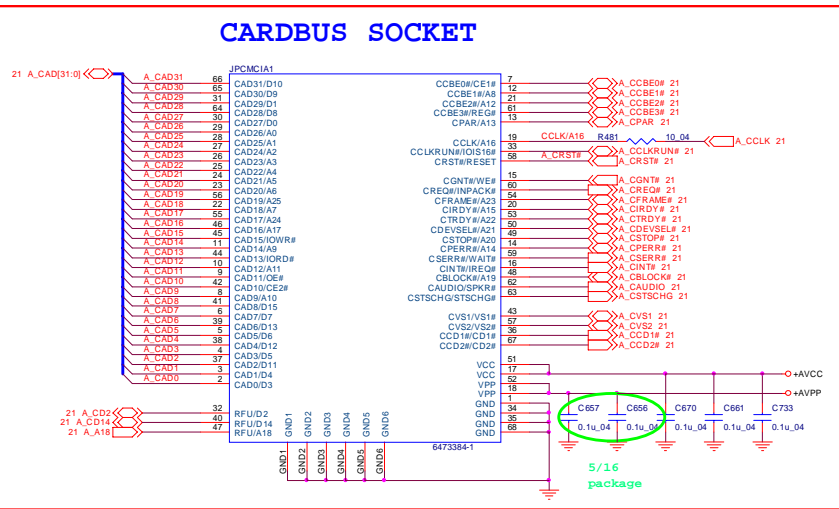
Schematic Diagrams

PCI7412, 1394

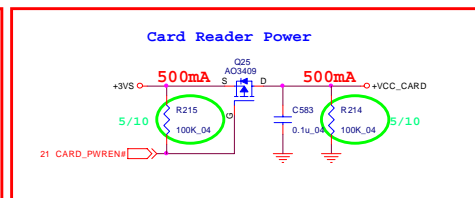
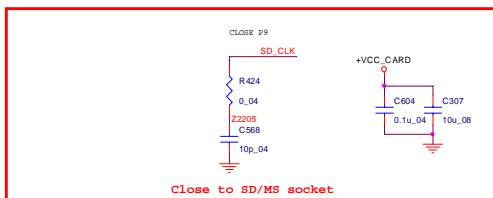
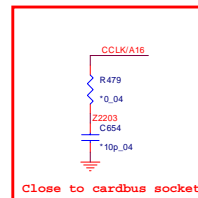
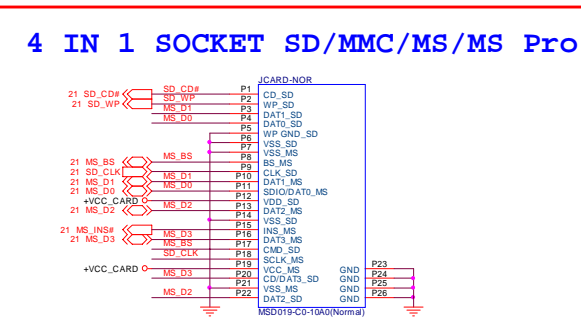
Sheet 21 of 34
PCI7412, 1394



PCM Socket, 3 In 1 Socket



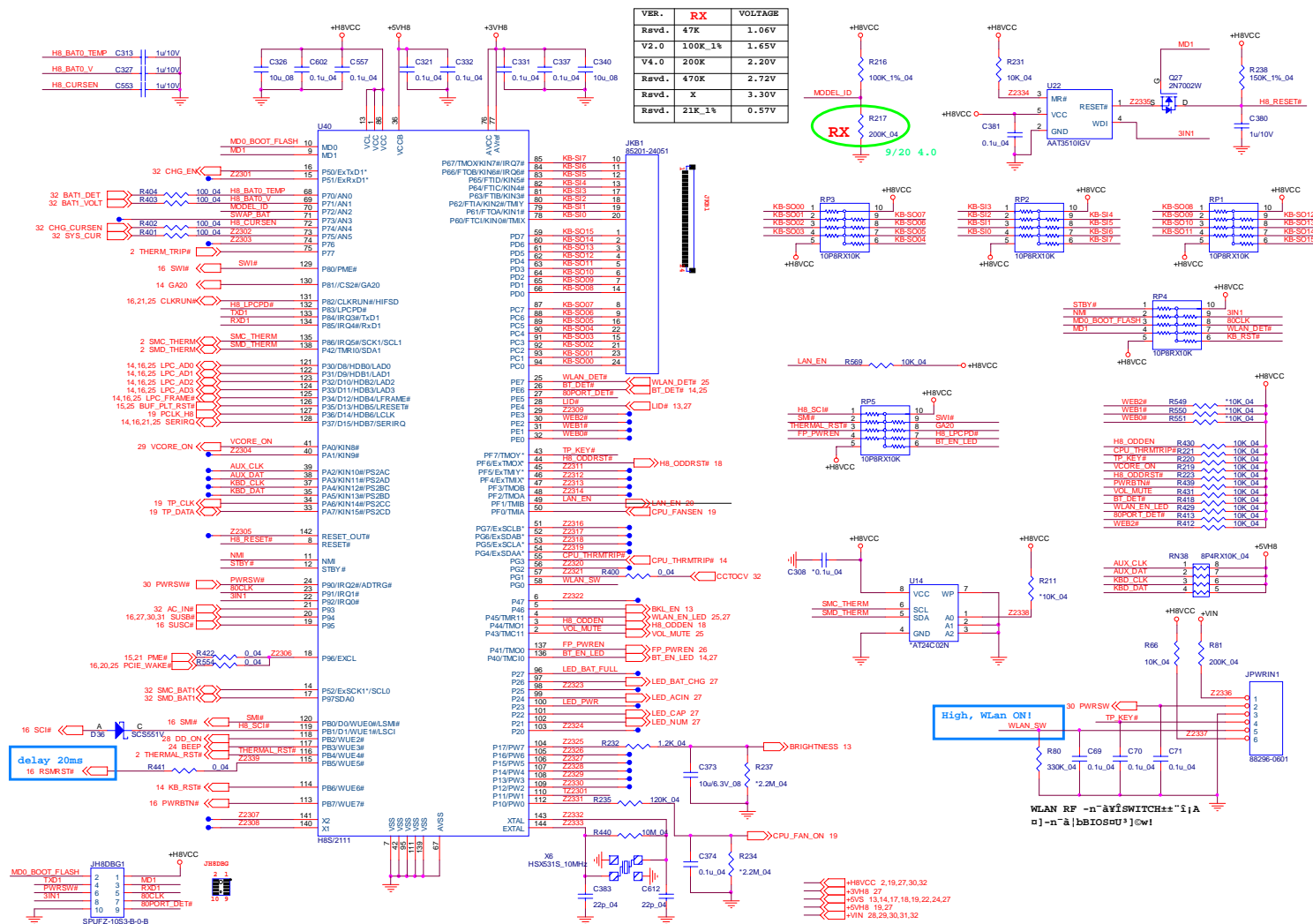
Sheet 22 of 34
PCM Socket, 3 In 1
Socket

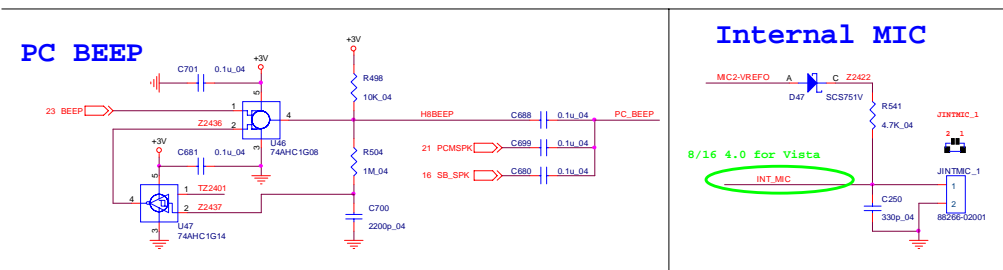
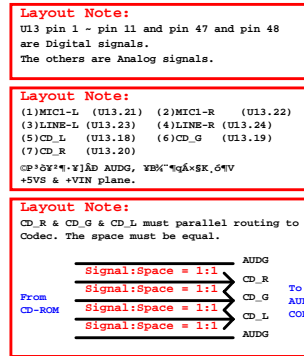


+3VS 2,5,8,9,10,13,14,15,16,17,18,19,20,21,24,25,26,27
+5VS 13,14,17,18,19,24,27
+AVCC 21
+AVPP

H8/21111

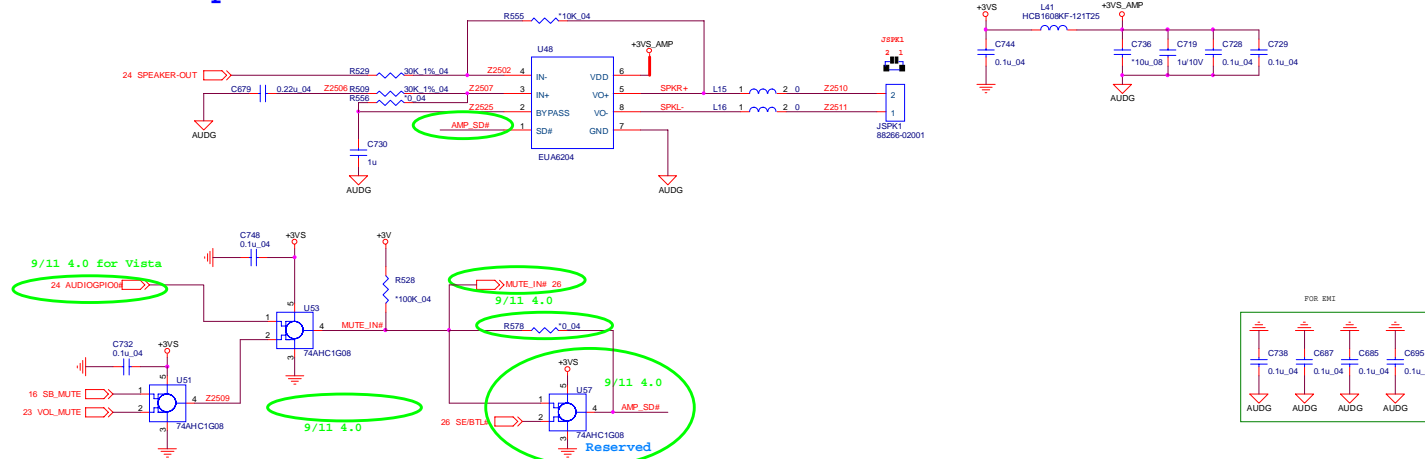
Sheet 23 of 34
H8/2111





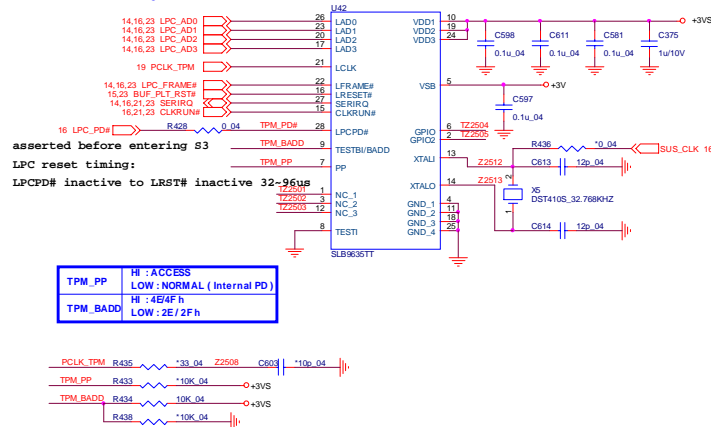
AMP, TPM, MINI PCIE

Amplifier

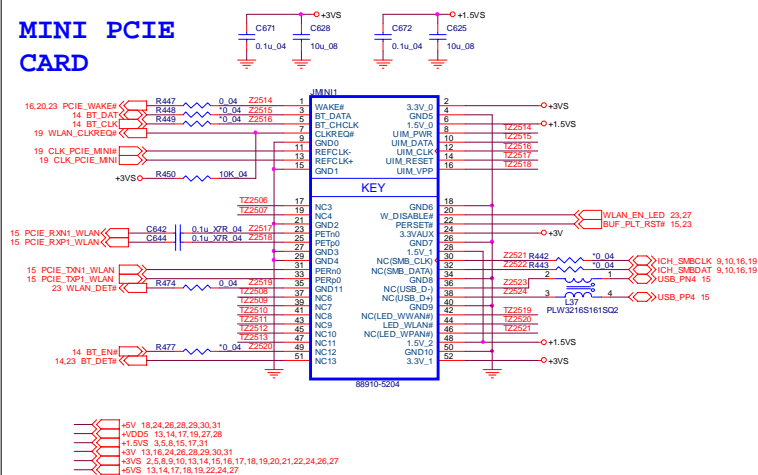


Sheet 25 of 34
AMP, TPM, MINI
PCIE

TPM 1.2

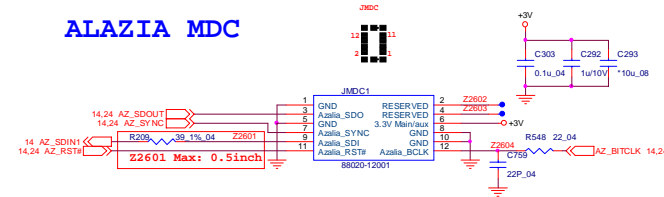


MINI PCIE
CARD

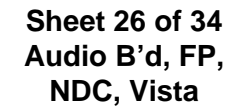


Schematic Diagrams

ALAZIA MDC



8/18 4.0 for Vista



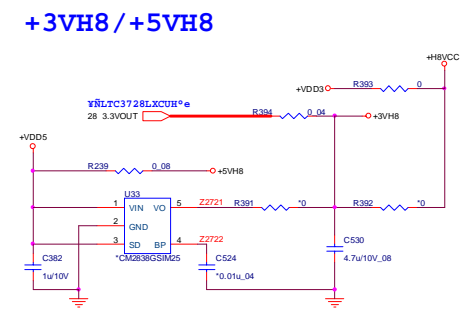
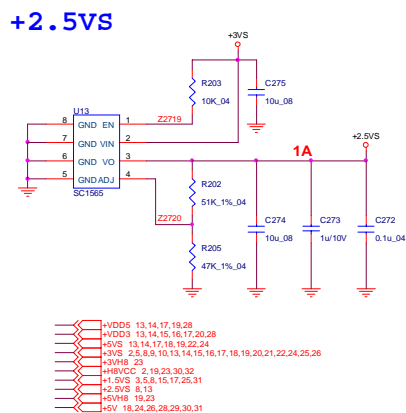
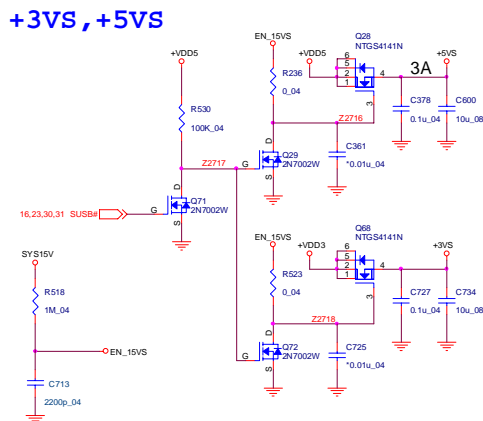
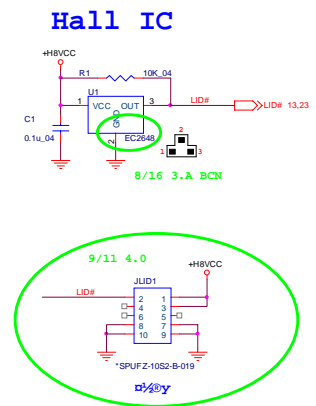
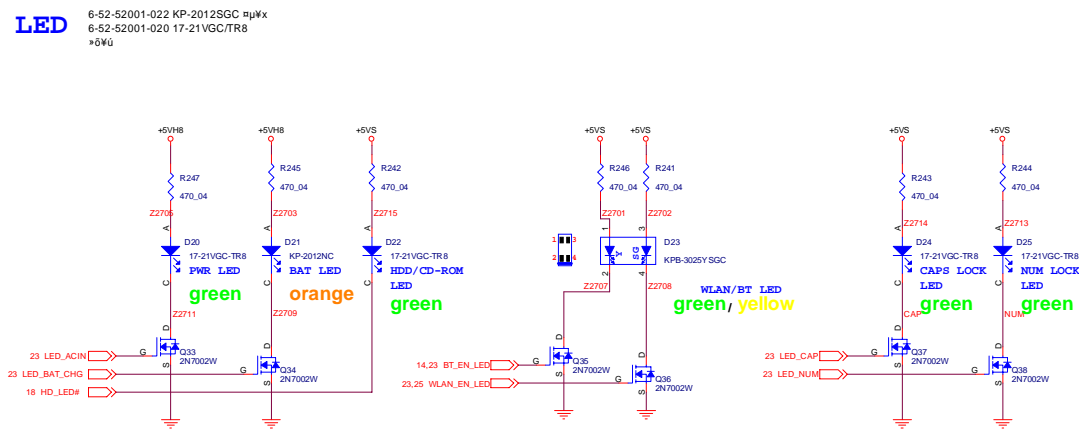
```
C770, C773
TPA4411 2.2u/10V/X5R_0603;010% .s0E or
        2.2u/6.3V/Y5V 6-07-22591-7G0
MAX4411 1u/10V/X7R_0603;010%
6-08-1051L-2I0
```



Schematic Diagrams

LED, HALL IC, SUS PWR

Sheet 27 of 34
LED, HALL IC, SUS
PWR



Schematic Diagrams

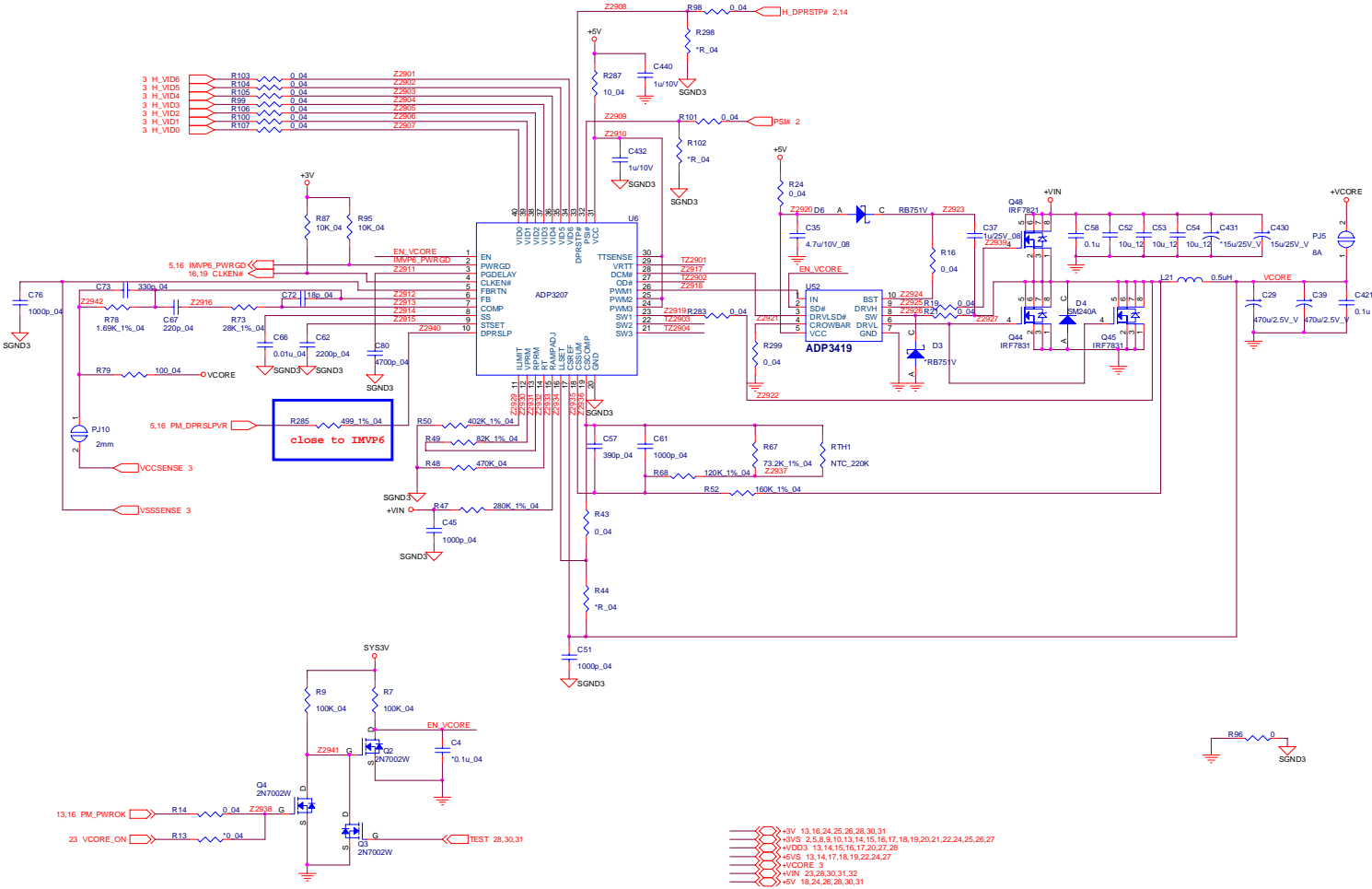


Schematic Diagrams

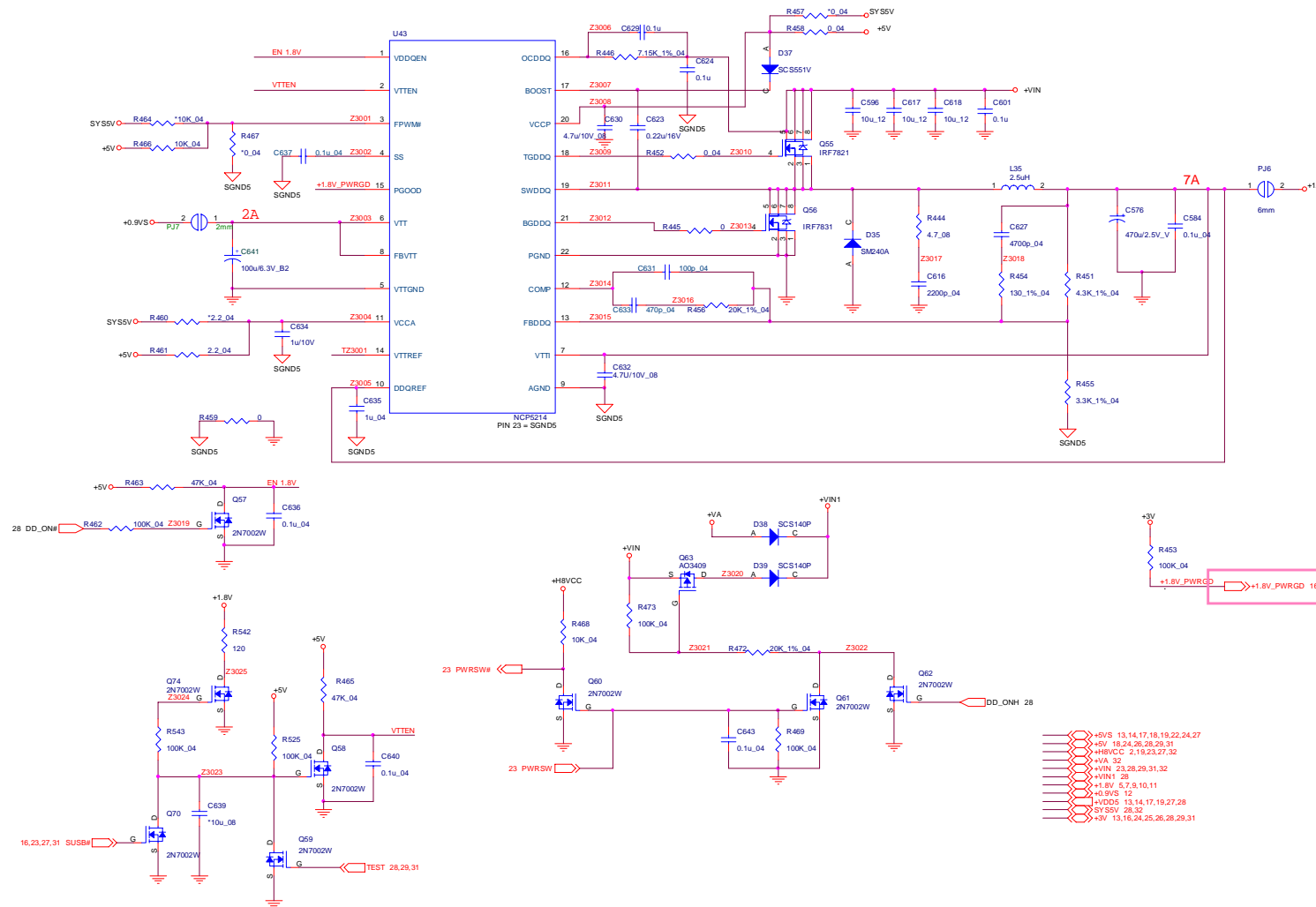
Schematic Diagrams

+VCORE

Sheet 29 of 34
+VCORE



Memory Power +1.8V, +0.9VS

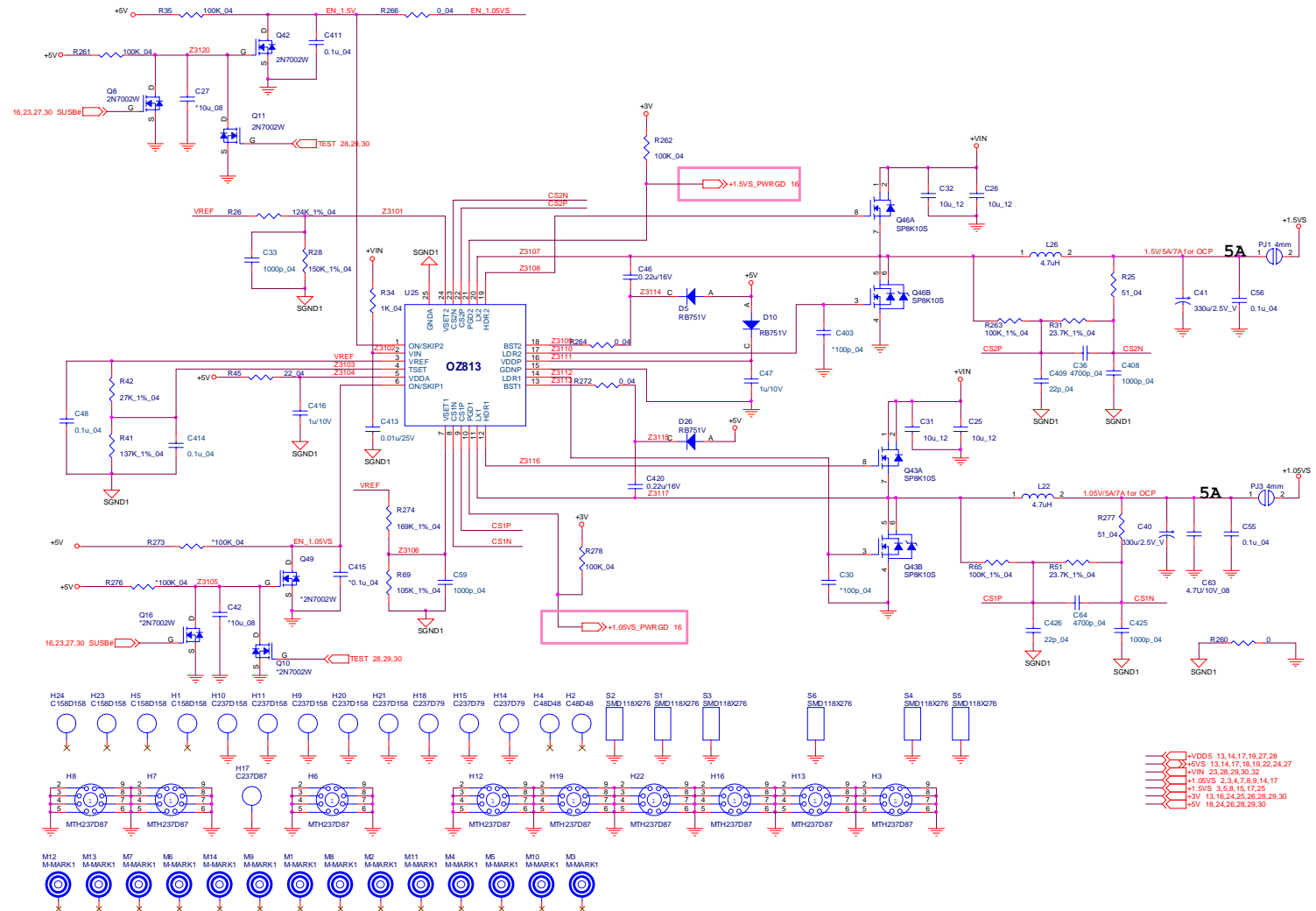


Sheet 30 of 34
Memory Power
+1.8V, +0.9VS

Schematic Diagrams

VCCP +1.5VS, +1.05VS

Sheet 31 of 34
VCCP +1.5VS,
+1.05VS



4S BMS

Charge Current 3.2A
Charge Voltage 8.4V
Total Power 48W

0.75V/1A

Battery Voltage: 6V-8.4V

Layout Notice:
 Layout should be near around H8

BOM

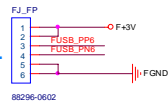
Ref	Part	Value	Footprint
Q1	2N7002W		
Q2	2N7002W		
Q3	2N7002W		
Q4	2N7002W		
Q5	2N7002W		
Q6	2N7002W		
Q7	2N7002W		
Q8	2N7002W		
Q9	2N7002W		
Q10	2N7002W		
Q11	2N7002W		
Q12	2N7002W		
Q13	2N7002W		
Q14	2N7002W		
Q15	2N7002W		
Q16	2N7002W		
Q17	2N7002W		
Q18	2N7002W		
Q19	2N7002W		
Q20	2N7002W		
Q21	2N7002W		
Q22	2N7002W		
Q23	2N7002W		
Q24	2N7002W		
Q25	2N7002W		
Q26	2N7002W		
Q27	2N7002W		
Q28	2N7002W		
Q29	2N7002W		
Q30	2N7002W		
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Q32	2N7002W		
Q33	2N7002W		
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Q76	2N7002W		
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Q81	2N7002W		
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Q84	2N7002W		
Q85	2N7002W		
Q86	2N7002W		
Q87	2N7002W		
Q88	2N7002W		
Q89	2N7002W		
Q90	2N7002W		
Q91	2N7002W		
Q92	2N7002W		
Q93	2N7002W		
Q94	2N7002W		
Q95	2N7002W		
Q96	2N7002W		

Bttery Voltage:
6V~8.4V

Schematic Diagrams

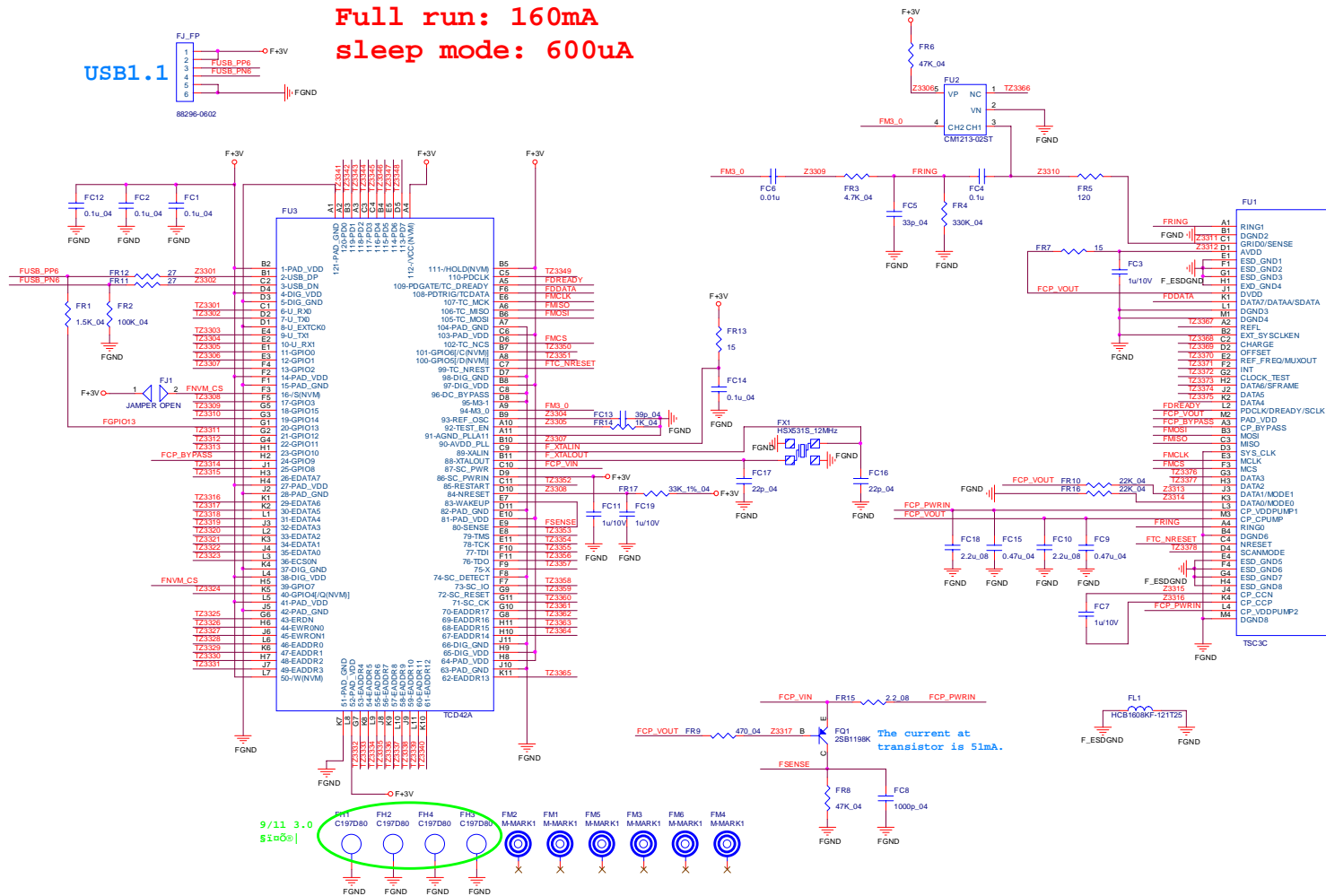
Fingerprint B'd

USB1.1



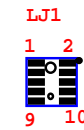
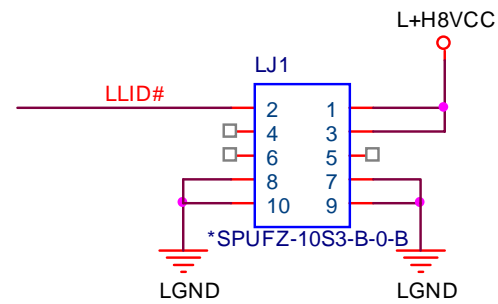
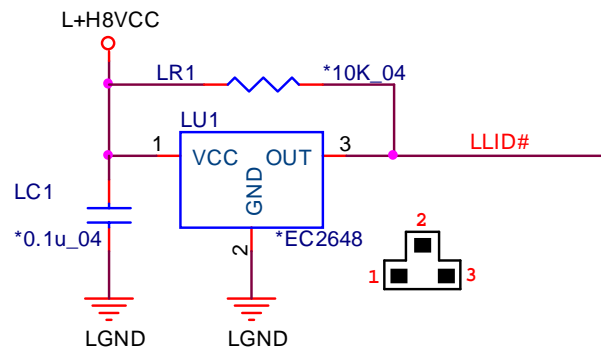
Full run: 160mA
sleep mode: 600uA

Sheet 33 of 34
Fingerprint B'd



Lid SW B'd

Hall IC



Sheet 34 of 34
Lid SW B'd

